

BELMONT MILL
(Nevada Belmont Mill)
Humboldt-Toiyabe National Forest
Approximately 7 miles south of U.S. Route 50 on USDA Forest
Service Road No. 623
Ely vicinity
White Pine County
Nevada

HAER NV-46
HAER NV-46

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

BELMONT MILL (Nevada Belmont Mill)

HAER No. NV-46

- Location: Approximately 7 miles south of U.S. Route 50 on USDA Forest Service Road No. 623, Ely vicinity, White Pine County, Nevada.
U.S. Geological Survey, Seligman Canyon, Nevada, 7.5 Quadrangle (1992), Township 16 North, Range 57 East, Section 1.
UTM Zone 11, Easting 2060442.09, Northing 14267128.93 (NW corner); Easting 2060454.61, Northing 14266329.45 (SW corner); Easting 2061254.07, Northing 14266341.98 (SE corner); Easting 2061241.55, Northing 14267141.44 (NE corner) (NAD 83).
- Present Owner/Occupant: United States Department of Agriculture (USDA) Forest Service, Humboldt-Toiyabe National Forest
- Present Use: Abandoned
- Significance: The Tonopah Belmont Development Company (TBDC) was one of the most important companies created during Nevada's early twentieth-century mining boom. As ore deposits in its central Nevada mines were depleted, the company sought new claims to resurrect its fortunes. In 1926 TBDC built the Belmont Mill near Hamilton to process lead and silver ore from its recently acquired claims in the White Pine mining district of eastern Nevada. The small pilot mill employed the most recent advances in table concentration and flotation mineral processing techniques, and the company erected numerous other industrial and domestic buildings and structures, including an aerial tramway and boardinghouses, to support the mining and milling work. Although largely abandoned by TBDC after a few years, subsequent property owners continued to use and modify the site for smaller milling operations. Today, although most of the equipment has been removed, the Belmont Mill site is one of the only intact assemblages of early twentieth-century mining buildings and structures in eastern Nevada. Importantly, both industrial and domestic buildings and structures remain to provide a glimpse of daily life there. The site is a

tangible reminder of the decline and failure of a once-powerful company and, thereby, of the boom and bust cycle so common in the mining industry. The subsequent modification and reuse of the site for small-scale operations typifies the ceaseless hum of optimism that sustains the mining industry.

Historian:

Anne Oliver, Principal, Oliver Conservation Group.
Fieldwork for the project was conducted in the fall of 2010.
Project documentation was accepted by HABS/HAER in 2011.

Project Information:

This project was completed by a team of private contractors at the request of the USDA Forest Service, Humboldt-Toiyabe National Forest (HTNF), in consultation with the Nevada State Historic Preservation Office. When the property came under the purview of the HTNF several years ago, the agency recognized the historic significance of the site and sought to fulfill its obligations under Section 110 of the National Historic Preservation Act by documenting and stabilizing the buildings. The project contract was awarded to ajc architects of Salt Lake City under an indefinite delivery/indefinite quantity contract between Region 4 of the USDA Forest Service and the firm. The project historian was Anne Oliver, a historic preservation consultant with Oliver Conservation Group (Salt Lake City) and sub-contactor to ajc; she was responsible for all aspects of the historical report and would like to thank Eric Stever, Archaeologist, HTNF Ely District, and Peter Fleischmann, Civil Engineer, HTNF, for their assistance. Matt Wallace, Intern Architect with ajc architects, was responsible for the architectural measured drawings and completed all fieldwork and final drawings with the assistance of Oliver Smith Callis, Draftsman. The photography was produced by Steve Tregeagle Photography (Salt Lake City), a subcontractor to ajc, under the direction of Steve Tregeagle and with the assistance of Heath Brown.

Table 1. Numbering system for the buildings and structures at the Belmont Mill, HAER No. NV-46, and associated USDA Forest Service feature numbers and names.

HAER Number	USDA Forest Service Feature #	Feature name
NV-46-A†	F1	Mill
NV-46-B	F15	Power House
NV-46-C	N/A	Tram Towers 1 & 2 (two on site)
NV-46-D	F17	Off-loading Ramp and Chute
NV-46-E	F18	Waste Rock Pile
NV-46-F	F14	Tool Shed and Lumber Rack
NV-46-G	F2	Assay Office
NV-46-H	F3	Supervisor's Office
NV-46-I	F4	Boardinghouse
NV-46-J	F5	Root Cellar
NV-46-K	F6	Workshop
NV-46-L	F7	Lower Outhouse
NV-46-M	F8	Lower Charcoal and Lumber Pile
NV-46-N	F9	Upper Boardinghouse
NV-46-O	F10	Upper Outhouse
NV-46-P	F11	Shed
NV-46-Q	F12	Trailer
NV-46-R	F19	Upper Charcoal and Lumber Pile
NV-46-S	F16	Water Tank
NV-46-T	F21	Collapsed Building
None (discussed in report only)	F13	Cellar
None (discussed in report only)	F20	Depression
None (discussed in report only)	N/A	Tram Towers 3 - 6 (four off site)
None (discussed in report only)	N/A	Mine (off site)
None (discussed in report only)	N/A	Mine Buildings (off site)

†This includes the mill and associated unnumbered features: two mixing/concentration tanks to south, one concentration/thickening tank to east, and a loading dock/equipment mount feature to east.

NARRATIVE OVERVIEW

The Belmont Mill and most of its associated buildings and structures were designed and constructed by the Tonopah Belmont Development Company (TBDC) in 1926. In the ensuing years, modifications were made to the existing buildings and several new buildings and structures were added to accommodate the changing needs of the site users. To document both site development and the numerous resources, this report begins with a narrative overview of the site's history, followed by two outline-format reports (HAER Nos. NV-46-A and NV-46-B) and eighteen HAER short-format reports (HAER Nos. NV-46-C through NV-46-T) for the twenty extant historic buildings and structures (Table 1).

A. Introduction

Almost the entire state of Nevada lies within the Basin and Range geologic province of the western United States. The topography is typified by block-faulted mountain ranges trending north-south that separate long, broad valleys, many of which are closed basins terminating in a playa at the lowest point. Most of the basins are about 5,000 feet above sea level, while the ranges may be 8,000 to 13,000 feet in elevation. The block faulting was accompanied by mineralization that led to rich deposits of ore, probably the most salient factor in Nevada's history since the 1850s. Today the province provides nearly all of the copper, gold, silver, and barite in the United States.

Within the Basin and Range Province lies the Great Basin physiographic region, largely an arid desert with watersheds that do not drain to oceans. Eastern Nevada is part of this desert region, characterized by hot, dry summers and harsh, cold winters. Valleys may average as little as three inches of rain per year while the ranges receive somewhat more precipitation, largely in the form of snow. Vegetation is correspondingly sparse and hardy, with grasses, shadscale and sagebrush at the lower elevations transitioning to pinyon and juniper and finally to fir, pine and spruce high in the mountains. Watercourses may be lined with willow and cottonwood.

In this harsh climate, the location of ranches and settlements was determined by the location of fresh water, mainly around springs and along watercourses in the foothills of the ranges. The great exceptions were mining camps and towns, which sprang up wherever ore was found. The Franciscan monks of New Spain worked the first historic mines in the state in the late 1700s. Mormon settlers and others worked some gold and lead mines in the late 1840s and 1850s, although most prospective miners were simply passing through the region en route to the

California gold fields.¹ The discovery of western Nevada's Comstock Lode in 1859 spurred the first great wave of mining activity not only in western Nevada but in the central and eastern regions as well, as prospectors sought new hard rock deposits of silver ore. Mining districts were established across the state until the boom tapered off in the 1880s.

In these early years, the mining camps and towns had a voracious demand for lumber that took a heavy toll on the limited timber stands of Nevada's mountain ranges. Cattle ranching, which first arose from the need to feed the miners, impacted grazing lands in both the basins and ranges as ranchers drove the stock to seasonal forage. By 1890, the number of sheep surpassed the number of cattle in Nevada and tensions arose between cattle ranchers and the often-transient sheep outfits as overgrazing further depleted already limited resources.

Overgrazing, deforestation and regional water rights were serious concerns at the turn of the century. Populist views espousing "the greatest good for the greatest number" gained strength after Theodore Roosevelt became President in 1901. Roosevelt directed his powers toward resource protection, which included the designation of numerous forest reserves.²

With the rise of the conservation movement, mining, homesteading, and settlement were no longer the primary goals for the vast tracts of empty land in the western United States. The federal government began retaining control of the remaining lands by withdrawing them from sale and managing them on behalf of the public for their natural resource value, and the creation of national forests and parks on public lands was the culmination of a shift in the federal government's management of lands in the west.

In east-central Nevada, Forest Service examiners first surveyed lands for designation as forest reserves in 1906. The surveys focused on the area's isolated, timbered mountain ranges, including the White Pine range, the future location of the Belmont Mill. This and adjacent ranges were withdrawn from available lands in the same year and the withdrawal was made permanent on February 20, 1909, when President Roosevelt established the Nevada National Forest. At this time,

¹ Martha H. Bowers and Hans Muessig, History of Central Nevada: An Overview of the Battle Mountain District, Bureau of Land Management Cultural Resources Series No. 4 (Reno: Bureau of Land Management, 1982), 23.

² Richa Wilson, Privies, Pastures, and Portables: Administrative Facilities of the Humboldt-Toiyabe National Forest, 1891-1950, vol. 1 (Ogden, UT: USDA Forest Service, Intermountain Region, 2001), 20. Wilson, the Forest Service Region 4 architectural historian, provides a very thorough historic context statement for the Forest Service in Nevada, which is only briefly summarized here.

the White Pine district was described as “fully stocked with sheep and cattle and over run with wild horses,” with mining activity on a small scale.³

After a series of eliminations and additions, the Nevada National Forest encompassed 1.2 million acres by 1916 and was administered from the small town of Ely. By 1923 there were four rangers administering five divisions, including the White Pine.

The main activities on the forest consisted primarily of mining and stock raising, with an estimated 5,255 cattle and 50,280 sheep grazing on the forest in 1915. In addition, stockmen relied on water from the forest to irrigate hay fields. The mining communities of Ruth and Kimberley, as well as others at Hamilton, Taylor, Osceola, and Tungsten, also needed water for their operations.⁴

Other boundary changes and forest consolidations took place over the years with little effect on the White Pine district until 1951, when the Nevada National Forest was eliminated and the district was transferred to the Humboldt National Forest, with headquarters in Elko. In 1980, the White Pine and Ely districts were combined as the Ely District and in 1994 the Humboldt and Toiyabe forests were combined (with headquarters in Reno), resulting in the present forest and district configuration. During this entire period the group of claims comprising the Belmont Mill site, although surrounded by national forest land, remained active and in private ownership. The claims lapsed in the mid-2000s and the property reverted to the Humboldt-Toiyabe National Forest, which is now responsible for the extant buildings and structures.

B. The White Pine Mining District, 1865 – 1924

Belmont Mill is located about midway between the towns of Ely (36 miles to the east) and Eureka (40 miles to the northwest), in the White Pine mining district. The mill site lies at the northern end of the White Pine Mountains at an elevation of about 7,500 feet. The mill is situated near the mouth of McEllen [McEllin in early reports] Canyon, which lies between Pogonip Ridge and Mount Hamilton immediately to the west and Babylon Ridge to the east.⁵ The once-renowned town of Hamilton lies on the opposite side of Babylon Ridge about four miles to the southeast, just north of Treasure Hill.

³ Foyer Olsen, “History of the White Pine Division, 19 March 1941,” p. 9, as cited by Wilson, Privies, Pastures and Portables, 40.

⁴ Wilson, Privies, Pastures, and Portables, 41.

⁵ “Pogonip,” an English adaptation of the Shoshone word for cloud, is a western term for the ice fogs common during cold winter spells in deep mountain valleys. Its use as a place name speaks to the difficult winter weather conditions in the area.

The histories of both the White Pine district and the mill are a distillation of the more general history of mining in the Nevada.⁶ This history can be broken into nine periods, named below.⁷ Of course, due to the particular mineral resources of the White Pine district and the construction date of the mill, some of the periods are more relevant than others, but most have influenced the history of the site.

1. Discovery and the First Mining Boom, 1862-1880
2. Late Nineteenth Century Decline, 1880-1899
3. The Early Twentieth Century Mining Boom, 1900-1918
4. Fluctuations between the Worlds Wars, 1919-1939
5. High Demand During World War II, 1939-1945
6. The Rise of Tungsten and Base Metals, 1946-1954
7. The Decline of Metals and the Rise of Oil, 1955-1964
8. From Copper to Gold, 1965-1979
9. The Gold Years, 1980-present

The White Pine mining district, about 16 miles square, was organized in 1865 with the discovery of ore on the west slope of Mount Hamilton, but intense development began only after rich silver chloride deposits were discovered on Treasure Hill in 1868.⁸ Described as “one of the wildest rushes or stampedes... since the Comstock boom,” the rush resulted in the creation of Hamilton and several nearby towns, including Treasure City, Eberhardt, and Shermantown. At its peak, Hamilton boasted a population of 10,000 and, when White Pine County was created from the larger Lander County in 1869, Hamilton was named the county seat. The population of the district as a whole during the boom was estimated at 25,000 people.

In 1870 there were 197 mining companies operating, with a nominal capital of \$277,564,000 besides numerous leases and private enterprises. At this time there were 23 mills with 200 stamps dropping on ore. In addition to this there were nine

⁶ Broad contextual histories of the history of mining in the west, and of Nevada specifically, are readily available elsewhere. See in particular Joseph V. Tingley, Robert C. Horton, and Francis C. Lincoln, Outline of Nevada Mining History Nevada Bureau of Mines and Geology Special Publication 15 (Reno: University of Nevada, 1993). More specific histories of east central Nevada are provided by Bowers and Muessig, History of Central Nevada; Donald L. Hardesty and Timothy Scarlett, “Historical Mining in the Central Nevada Ecounit of the Humboldt-Toiyabe National Forest,” unpublished report (Challenge Cost-Share Agreement 17-CCS-96-027) prepared for Humboldt-Toiyabe National Forest, 1998 (rev. 2001); and Steven R. James (ed.), Prehistory, Ethnohistory, and History of Eastern Nevada: A Cultural Resources Summary of the Elko and Ely Districts, Cultural Resource Series No. 3 (Reno: Bureau of Land Management, 1981).

⁷ These periods are derived from histories prepared by Tingley et al., Outline of Nevada Mining History, and Hardesty and Scarlett, “Historical Mining in the Central Nevada Ecounit.”

⁸ The creation of the White Pine district was only part of the general frenzy of activity in White Pine County, which saw the establishment of more than a dozen new mining districts in 1869 and six more in the 1870s. See James, Prehistory, Ethnohistory, and History of Eastern Nevada, 254-55.

smelters of various capacities, reducing the ores of the lead belts. The ores of Treasure Hill were “dry” and were treated by the Washoe, or pan amalgamation process. The lead ores were so rich in lead that the bullion derived from the smelters was little better than the crude ore, and none of these smelters were economically successful.⁹

The boom ended abruptly in 1870 and it has been described as “one of the most, intense, and shortest, mining booms in the American West.”¹⁰ Several companies, backed by British investors, prolonged the life of the district for about fifteen years as they searched fruitlessly for more ore, but Hamilton and the adjacent towns were largely depopulated during the course of the 1870s. Hamilton was dealt the final blow in 1885, when a fire destroyed much of the town and all of the county buildings; the county seat was moved to Ely two years later.¹¹ But Hamilton wasn’t completely abandoned until the 1930s: oral histories document that about 100 people lived in the area in 1917, and there were 56 registered voters residing in Hamilton in 1928.¹²

The White Pine mining district is broken into three distinct sections: a copper belt on the west slope of the White Pine Mountains centering around Monte Cristo, a silver-lead belt on the east side of the range centering around McEllen Canyon, and a silver belt further east centering around Hamilton and Treasure Hill (Figure 1). All of the ore deposits and veins are located in Paleozoic strata.

The silver ores of Treasure Hill and the silver-lead ores of the “Base Metal” range owe their origin to the folding and faulting of the limestones which produced the fissures and channels in which ore-bearing solutions circulated. Absence of igneous rocks in these two belts, however, is a noticeable feature. On the other hand, the copper ores on the west side of the mountain are derived from an invasion of porphyries.¹³

The mines of the lead belt are located almost wholly in a faulted and fissured zone of the Lone Mountain dolomite. The exceptions are the Glory and Quartz claims (both worked by TBDC), which are located in the Eureka quartzite and where ore

⁹ W. S. Larsh, “Mining at Hamilton, Nevada,” in Mines and Minerals (June 1909), 521.

¹⁰ Donald L. Hardesty, “Managing Historic Properties in the White Pine Mining District,” (unpublished report prepared for Humboldt National Forest, 1993), 1.

¹¹ For a complete history of the district during this period, see W. Turrentine Jackson, Treasure Hill: Portrait of a Silver Mining Camp (Reno, University of Nevada Press, 1963). Donald L. Hardesty provides a more focused history of Shermantown, derived from the archeological record, in “Treasure Hill and the Archeology of Shermantown” in CRM 7 (1998), 53-56.

¹² Jen Huntley-Smith, “Documentary Report for Archaeology of Treasure Hill,” p. 6, as cited by Hardesty, “Managing Historic Properties in the White Pine Mining District,” 4.

¹³ Larsh, “Mining at Hamilton,” 522.

is found in brecciated quartzite and in other mineralized rock along faults.¹⁴ In the lead zone, the primary ore material is galena, which oxidizes to anglesite, a sulfate mineral. In the presence of meteoric water carrying calcium carbonate and carbonic acid, the anglesite is slowly replaced or altered to cerrusite, a carbonate mineral. “The enclosing rim of anglesite and cerrusite partially protects the core of galena from further oxidation; galena nodules surrounded with anglesite and cerrusite are common.” The ore also contains silver, perhaps as argentite, as well as copper (in the form of malachite and less commonly chrysocolla or cuprite) and zinc (as smithsonite).¹⁵ (This mixture of both lead sulfate and lead carbonate would require a complex milling process to extract the maximum amount of lead ore, and the Belmont Mill used a combination of technologies, some quite recent, to achieve this.)

The lead-silver belt deposits were discovered shortly after the silver deposits at Treasure Hill, and some of the mine claims associated with the Belmont Mill may have been established at that time. Early attempts to smelt the ores were unprofitable due to crude methods and high transportation costs. However, it was reported that, in the 1880s,

... when mining had been abandoned on Treasure Hill, attention was again directed to [the lead deposits]. More favorable market conditions made it profitable to export the best grade of these ores to Salt Lake and San Francisco for reduction, and from these mines have since come the ores that have employed, for more than 20 years, the small remaining population of the district.¹⁶

As of 1909, the Nevada Lead Company and the Cornell were listed as active mines. (Both of these claim groups would be worked by TBDC in the 1920s.) Production from all the lead-producing mines in the district was given at 145,000 tons, averaging 65 percent lead and 20 ounces of silver per ton, with a gross value of nearly \$6,000,000. No outside financing was involved in these operations and no on-site mills or smelters were mentioned in association with them. In fact, “Little, if any, capital other than that taken from the mines has been expended in their development, and... only the highest grade ores have been profitable... [Nevertheless], many comfortable fortunes have been awarded to leasers, individuals, and companies by their operation.”¹⁷

The claims that would eventually comprise the TBDC mine were definitively located between 1890 and 1926 (Figure 2). These included:

¹⁴ Fred L. Humphrey, Geology of the White Pine Mining District, White Pine County, Nevada, Nevada Bureau of Mines Bulletin 57 (Reno: University of Nevada, 1960), 97 and 103-05.

¹⁵ Ibid., 94.

¹⁶ Larsh, “Mining at Hamilton,” 523.

¹⁷ Ibid.

Glory Mine, Mineral Survey No. 4339, Patent No. 747397
Quartz Mine, Mineral Survey No. 4339, Patent No. 747397
Nevada
Nevada No. 2
Nevada Fraction
Nevada Protector
Ace of Hearts
Ace of Spades
Blue Bird No. 1
Blue Bird No. 2
Blue Eagle
Blue Jay
Blue Jay No. 1
Blue Jay No. 2
Blue Jay No. 3
Radio

The Glory and Quartz claims were patented in 1920 and were known as the “Cornell Group,” while the following thirteen unpatented claims were known as the “Nevada Group” or the “Nevada Lead.” The remaining claim, the unpatented Radio, was first located as the “Atlas” and was originally included with the Cornell Group, but over time became associated with the Nevada Group.¹⁸

The precise ownership history of the mine claims between the dates of their location and early 1926 remains unclear, although claim locators included Herman Hoppe, James Siri, David Ross, Alexander A. Muir, James Reck, Charles Mayotte, and Clyde A. Heller. The last two men were TBDC employees. Several individuals, including Rose Hankins, J. C. Wheeler, and Carl F. Muir, are also mentioned in title documents and agreements from the period, while Nevada-Cornell Silver Mines, Inc., appears to have had some involvement in the early ownership of at least the Quartz, Glory, and Radio claims.

According to the U.S. Bureau of Mines yearly publication, Mineral Resources, the Nevada Group (referred to as the “Nevada mine” or the “Nevada property”) was one of the White Pine district’s principal producers of lead ore between 1916 and 1923, and the ore was shipped to Tonopah for smelting at least in 1923.¹⁹ Figures

¹⁸ An undated property report from about 1920 stated that A. B. Witcher of Ely was the owner of the Cornell Group (Glory, Quartz, and Atlas claims) and that \$50,000 to \$100,000 in silver and lead ore had been extracted from the mine. See H. A. Johnson, “Cornell Group,” unpublished property report, Document No. 52900010, n.d. [University of Nevada, Nevada Bureau of Mines and Geology mining district files (Reno NV), available on-line at www.nbmj.unr.edu/mdfiles/mdfiles.htm].

¹⁹ V. C. Heikes, “Gold, Silver, Copper, Lead, and Zinc in Nevada,” in Mineral Resources, 1923 (Part I) (Washington: U.S. Government Printing Office, 1927), 514.

aren't available for individual mines, but the district as a whole produced 15,730,887 lbs. of lead and between 1902 and 1921.²⁰

But generally the district was very quiet: a 1916 U.S. Geological Survey bulletin describing mining districts in eastern Nevada failed to mention the White Pine district or note it on a map, although the location of Hamilton was marked.²¹ Accounts of the district in Mineral Resources between 1905 and 1924 indicate that lead-silver ores remained the principal product but that typically only 300 to 500 tons of ore were produced each year, most of it of high enough quality to be classified as shipping grade. Exceptions were the years from 1916 to 1918, during World War I, when as many as 2,800 tons of ore were produced. Due to increased demand for lead at this time, it was economically viable to treat lower grade ore at concentration mills, and about half the ore was milled while the other half was of shipping grade. In the early 1920s, the only other significant activity in the district involved cyanide reprocessing of old mill tailings.²²

By this time, the center of mining activity in eastern Nevada had shifted to the copper deposits of the Robinson district just west of Ely, an area that would remain active and important throughout most of the twentieth century. But the White Pine district would have one last flurry of activity in the mid-1920s, spurred by the investments of TBDC and the construction of the Belmont Mill.

C. History of the Tonopah Belmont Development Company, 1902-1924

The second great wave of mining in Nevada was ushered in by the discovery of silver ore deposits near Tonopah Springs in 1900, in the central part of the state; thus began "The Early Twentieth Century Mining Boom, 1900-1918." By 1905 the bustling town of Tonopah was established, as were the nearby boomtowns of Rhyolite and Goldfield. Two great mining companies arose during this boom, the Tonopah Mining Company and the Tonopah Belmont Development Company. Both were fully industrialized in the modern sense, defined by a highly structured organization, the existence of owners and financial backers in distant urban areas, an elaborate division of labor (wage earners, shift workers, managers, technicians, engineers, financiers), and the construction of large reduction facilities, offices, and residential infrastructure close to the mines.²³

²⁰ Francis Church Lincoln, Mining Districts and Mineral Resources of Nevada (Reno: Nevada Newsletter Publishing Company, 1923), 258.

²¹ J. M. Hill, Mines of Cherry Creek, Ely Range and other Eastern Nevada Districts, photographic reproduction of U.S. Geological Survey Bulletin 648, "Notes on Some Mining Districts in Eastern Nevada," 1916 (Las Vegas: Nevada Publications, 1983).

²² Hardesty and Scarlett, "Historical Mining in the Central Nevada Ecounit," 39.

²³ In History of Central Nevada, p. 39, Bowers and Muessig provide a summary of the pattern of development for nineteenth-century mining districts that applies to the early twentieth century as well: "discovery; exploitation and possibly abandonment; consolidation and the development of industrialized mining; decline; abandonment (or revival)."

A group of Philadelphia capitalists arranged to buy the original Tonopah claims in 1901 for \$300,000, creating the Tonopah Mining Company and naming Arthur Brock, a wealthy Philadelphia businessman, as president. In May 1902 either Arthur or John Brock arrived to inspect the new holdings and at that time negotiated the purchase of adjacent claims and a tunnel for \$250,000.²⁴ By December the tunnel property had been combined with several other holdings and was incorporated in New Jersey as the TBDC. The new company named John Brock as president; Arthur Brock, vice president; Clyde A. Heller (also of Philadelphia), secretary-treasurer; John Hays Hammond, consulting engineer; and Tasker L. Oddie, general manager.²⁵ “These two companies accounted for 60% of the district’s total production (\$146,336,102) from 1901 through 1940;” the estimated profits of TBDC alone were \$39 million.²⁶

TBDC initially shipped ore to the Comstock mills in Virginia City and to California but soon decided to build a 60-stamp mill adjacent to the Tonopah Mining Company’s mill at Millers, a stop along the Tonopah and Goldfield Railroad about thirteen miles west of Tonopah. A. H. Jones was named mill superintendent.²⁷ The opening of a rich new vein prompted the construction, between 1910 and 1911, of a new 500-ton cyanide mill in Tonopah itself, adjacent to the shaft.²⁸

The mill, according to A. H. Jones, was designed by the Belmont staff based upon the experience gained at Millers. The detail drawings and construction were supervised by Otto Wartenweiler.

The units used were sixty 1250-pound stamps, eight 5-foot by 16-foot tube mills with Dorr classifiers, eight 5-foot Callow cones, and sixteen Wilfley tables. Afterward, four 30-foot by 12-foot Dorr thickeners came, six 15-foot by 45-foot high Pachuca agitators, followed by a similar second set of thickeners and

²⁴ David Fairall, in “The Tonopah Belmont Development Company: Its Beginning and Formation,” in Nevada Historical Society Quarterly 40 (Fall 1997), 301-02, states that Arthur Brock visited Tonopah while Loren Chan, in Sagebrush Statesman: Tasker L. Oddie of Nevada (Reno, University of Nevada Press, 1973), 28, states that John Brock visited. Whichever the case, it is clear that the in the early days the two companies had close ties, often with overlapping officers and boards of directors.

²⁵ Chan, Sagebrush Statesman, 28. Oddie, a resident of Tonopah, was one of the original claim holders and quickly made a fortune in the next few years. He lost everything in the panic of 1907 and his association with the TBDC ended then, but he later served as the governor of Nevada and a U.S. senator.

²⁶ Fairall, “The Tonopah Belmont Development Company,” 290, and Bowers and Muessig, History of Central Nevada, 35.

²⁷ “Archie” Jones became general superintendent of milling at Tonopah in 1918; he was not technically educated but had milling experience in Colorado and was promoted rapidly through the company; he resigned in 1920. See Jay A. Carpenter et al., The History of Fifty Years of Mining at Tonopah, 1900-1950 [University of Nevada Bulletin XLVII (1), Geology and Mining Series No. 51. Reno: Nevada Bureau of Mines, 1953], 87.

²⁸ *Ibid.*, 50, 62-64.

agitators, and then 250 Butters filter leaves. The new feature in Tonopah practice was the use of Pachuca type agitators.

The pregnant solutions were precipitated by the Merrill zinc dust process with the precipitate briqueted and melted in double compartment Rockwell furnaces.²⁹

Clyde Heller was named president of the company at this time, a position he would retain until his death in 1937.³⁰ The company prospered under his direction between 1911 and 1915, producing 5.66 percent of the silver in the United States and returning profits from the Tonopah mines of \$2 to 3 million.

Similar to all prospering mining companies, President Heller [stated] in his [1914 annual] report “the examination of other mining properties has continued with a view to purchase, and negotiations are being conducted for one.” This was the start of many years of search, the taking over of many properties, and an over-all high capital loss.³¹

The company examined a total of 200 potential new properties in 1917 and fifty-eight in 1918, with several taken under option. Heller had of course anticipated the eventual depletion of the company’s holdings and indeed, beginning in 1916, the tonnage extracted from the Tonopah mines began a steady decline. High silver prices enabled profits of about \$1 million for the next two years but the drop in mine tonnage led to the closing of the mill at Millers in 1918, after eleven years of continuous operation. Much of the mill equipment was shipped to the company’s new Surf Inlet gold mines in British Columbia, Canada.³²

Profits in 1918 dropped to below \$500,000 and the early 1920s were dismal years: the Tonopah mill was closed in 1923 due to insufficient ore supply and the TBDC’s leases at Tonopah were forfeited.³³ Profits were below \$200,000 by

²⁹ Ibid., 81. This is a summary of a very detailed paper Archie Jones presented on the construction and operation of the mill at the American Institute of Mining Engineers meeting in San Francisco in 1915. See Jones, “The Tonopah Plant of the Belmont Milling Co.,” in Transactions of the American Institute of Mining Engineers, vol. LII (New York: American Institute of Mining Engineers, 1916), 95-122. Otto Wartenweiler opened an office in the Van Nuys Building in Los Angeles in 1914 and designed at least two other large mining and milling plants; see Steam Vol. XIII No. 1 (January 1914), 26. Given his past association with TBDC he may have been involved in the design of the Belmont Mill but there is no direct evidence of this.

³⁰ By the 1920s, the TBDC corporate office address was given as 500 Bullitt Building, Philadelphia, with a mine office in Tonopah. It appears that Heller lived in Tonopah. See Walter Harvey Weed, The Mines Handbook, vol. XV (Tuckahoe, NY: The Mines Handbook Co., 1922), 1350.

³¹ Carpenter et al., The History of Fifty Years of Mining at Tonopah, 83.

³² Ibid., 85-86.

³³ Walter Harvey Weed, The Mines Handbook Vol. XVI (Tuckahoe, NY: The Mines Handbook Co., 1925), 1506.

1924, deriving mainly from the Surf Inlet mines, and the company continued to search for new properties to revive its fortunes. In 1925, TBDC exercised an option to purchase the MacNeill mine in the Vulture district near Wickenburg, Arizona, and also entered into an option on a lead-zinc mine near Hamilton, in the White Pine district of Nevada.³⁴

D. The Construction of the Belmont Mill, 1925-26

In 1925, Mineral Resources reported that the “Belmont Development & Mining Co. was actively engaged in developing the Nevada and Roosevelt mines, which yielded some first-class lead ore and a little ore that was jigged.”³⁵ No title or lease records were located to confirm that the company had yet purchased the Nevada Group claims, but net profits for the year dropped to about \$35,000, partially due to the costs of new exploration work.³⁶

By early 1926, title records confirm that TBDC owned all of the individual claims comprising the Nevada Group. Initial explorations proved promising, and on March 4, 1926, the Ely Daily Times heralded,

The Tonopah Belmont Development company, will build a small pilot mill at Hamilton this spring, in which to conduct tests on the ore in the property the company is developing on the lead belt, west of Treasure Hill. Clyde A. Heller, president of the company stated that material for the mill will be assembled and construction started just as soon as the snow goes off and condition of the roads will permit trucking.

...Previous reports from Charles Mayotte, [mine] superintendent, showed the property to be opening up in a gratifying manner and that there is already developed sufficient ore to justify the construction of a small mill. Development has been carried on through a winze sunk from the tunnel level. The property has long been a producer of silver-lead ore of good grade.

Later in the month, P. W. Racey, TBDC's general superintendent for Nevada operations, issued a statement describing the new workings in the mine and noted, “The Belmont mill at Tonopah is being dismantled and considerable amount of the machinery will be shipped to Hamilton and used in the new test mill.” He

³⁴ Carpenter et al., The History of Fifty Years of Mining at Tonopah, 87-90.

³⁵ V. C. Heikes, “Gold, Silver, Copper, Lead and Zinc in Nevada,” in U.S. Bureau of Mines Mineral Resources, 1925 (Part I) (Washington: U.S. Government Printing Office, 1928).

³⁶ Wall Street Journal, April 14, 1926.

also mentioned an existing compressor and hoist at the Nevada mine, no doubt relicts of previous owners.³⁷

To facilitate the initial relocation of machinery, future trucking of ore, and winter access to and from the mill site, Racey also asked the White Pine County commissioners to construct a seven mile stretch of road “across the flat” to connect the old Hamilton road near the mouth of McEllen Canyon with the Lincoln Highway (U.S. Route 50) to the north, just west of Antelope Summit. The county agreed to the proposal in early May and the road was completed about two months later; it is the same graded dirt road that provides access from the highway today.³⁸

Title records document that, in April and August 1926, Clyde Heller located the four unpatented mill site claims (Nevada Nos. 3 through 6).³⁹ Construction was underway by mid-April, with L. O. Bastian as superintendent of construction. Original plans called for a small, 50-ton capacity mill, but one designed to allow for additions “if the company desire to treat custom ores” from nearby mines. “The new mill will comprise rotary grinders, concentrating tables, cyaniding and flotation, and is being designed especially for the treatment of the ores of that district.”⁴⁰

At different times in central Nevada’s history, six main types of ore reduction methods were used to separate the metals from the gangue (or waste rock):

1. Washoe pan process: Used to extract silver from ore. Ore was crushed to a fine powder, mixed with water, and fed into large pans or vats and mixed with mercury, salt, iron filings, and other materials. The water was then drained and the gold and silver, which had amalgamated with the mercury, were placed in a retort furnace and heated to separate the mercury from the precious metal, which was then cast as bullion.
2. Reese River process: A version of the Washoe process developed to treat ores near Austin. Ore was crushed and mixed with salt, then roasted in large furnaces to convert silver sulfide to silver chloride. The material could then be treated with the Washoe pan process.

³⁷ Ely Daily Times, March 17, 1926. TBDC was simultaneously investing in “Camp Belmont,” its new Arizona lead-silver property, including mine development work, well drilling, building construction, telephone line construction, and machinery installation; some of the latter was doubtless salvaged from the Tonopah mill as well. See “Tonopah Belmont Opens Mine in Arizona,” in Engineering and Mining Journal-Press vol. 121: 22 (May 29, 1926), 896.

³⁸ Ely Daily Times, March 29, May 3, June 2, and August 4, 1926.

³⁹ White Pine County Records, Book 96, p. 599-600; Book 102, p. 89.

⁴⁰ Ely Daily Times, April 16, 1926.

3. Cyanide process: Often used after the Washoe pan process to increase efficiency and recovery, and also used to treat old mine tailings to extract gold and silver. Ore was crushed to a fine powder, mixed with water and placed in large wood or concrete tanks containing a solution of potassium or sodium cyanide, then agitated. The cyanide chemically separated the metals from the gangue. The metal-bearing cyanide solution was drawn off the tank and the remaining fines, or slimes, were discarded as tailings. The cyanide solution was then treated to precipitate the metals.
4. Smelting: Crushed ore was placed in a furnace, roasted to drive off unwanted carbon or sulfur, and then combined with reducing substances (often charcoal or coke) to induce a chemical reaction and reduce metal oxides to elemental metal and waste rock, or slag.
5. Gravity concentration: Crushed ore was placed in jig concentrators or shaking tables (e.g., Wilfley tables) and shaken back and forth (or later centrifuged), a process during which metals would separate from the gangue due to differences in specific gravity. The process was used on its own and in combination with other processes to maximize metal extraction.
6. Flotation: The froth flotation process was developed for processing sulphide minerals in the late nineteenth century, then perfected and widely used in the early twentieth century; it was commonly used for lead-bearing ores as an alternative to smelting. "Ore was crushed to a fine powder in ball or rod mills (these replaced stamp mills in the early 20th century). Crushed ore was then mixed with water and other compounds and fed into flotation cells. Compressed air was bubbled through the cells, bringing the lead and zinc minerals to the surface where they were skimmed off, dried and sent to a smelter. Where significant amounts of silver were also present in the ore, slimes from the flotation cells were sent through a cyanide tank to recover the silver."⁴¹

At the Belmont Mill, it was reported that a combination of gravity concentration, cyanidation, and flotation would be used. This is consistent with the type of processing required by the ores of the district:

Because of their high lead content, ores of the Eureka district and other districts with similar mineralogy [including the adjacent White Pine] could not be practically reduced using amalgamation or the Reese River or cyanide processes, because of the immense amounts of mercury required. In the nineteenth century the only alternative was smelting, relying on different melting points and

⁴¹ Bowers and Muessig, History of Central Nevada, 50.

specific gravities to separate waste rock (slag) from the lead, silver, zinc, and gold in the furnaces of a smelter. Introduction of flotation concentration in the 20th century provided a more viable alternative to smelting lead silver zinc ores, and several districts enjoyed revivals based on this technology.⁴²

The Belmont Mill has been altered over the years and most of the original milling equipment has been removed, thus it is impossible to know for certain the exact process that was originally used to treat the lead-silver ore.⁴³ But, based on the above information, it can be surmised that the original ore processing flow sheet for the mine and mill might have involved the following (Figure 3):

1. ore extraction at the mine;
2. preliminary crushing at the mine (if necessary - there were reports that only minimal processing was required because much of the ore was found in a crushed zone);
3. transport to the mill via aerial tramway;
4. deposition of the ore in ore bins;
5. grinding by rod mill;
6. classification into sands and slimes by Dorr classifiers; and
7. gravity concentration on Wilfley tables.

At this point the concentrates, essentially high-grade ore, would be collected while the tailings might be sent to a Dorr thickening tank and then to a flotation unit for further extraction of very small metal particles. Sulfidization may have been used at some point, either in the thickening tank or the flotation unit, to extract metal from lead carbonate ore. The slimes, or tailings, from the flotation unit might then be sent to a second tank for agitation in cyanide solution to extract the silver.

But even before the mill was constructed the workers had to be housed. In April, foundations were laid for a “130-foot bunkhouse [HAER No. NV-46-I], looking to the enlargement of the present force of miners, which are now operating at the Nevada Lead property.” Rails and machinery were hauled from Tonopah by truck and from there to the mine site by a six-horse team; lumber was hauled from Ely.⁴⁴ The organization and resources typifying an industrialized mining company were evidenced when the TBDC reported that, by mid-May, forms for the mill’s concrete foundations were in place and that “the bunk house is practically finished as is the assay office [NV-46-G] and other necessary

⁴² Bowers and Muessig, History of Central Nevada, 49-50.

⁴³ TBDC undoubtedly prepared architectural and engineering drawings for the mill (and probably for many of the other buildings on the site as well) and also a milling flow sheet. The documents were not located during this project but might be included in TBDC’s corporate records, if these still exist and can be located with further research.

⁴⁴ Ely Daily Times, April 22, 1926.

buildings.” At about this time, W. I. Cowsert, “who erected the Belmont Mill at Tonopah,” replaced the ailing Bastian as construction supervisor.⁴⁵

Construction work progressed apace, and in early June TBDC could report that

the concrete [mill] foundation has been poured and piles of lumber and machinery are decorating the flat at the mill site. A reservoir for water storage [NV-46-S] has been built and several miles of pipe are now on the ground. Timber for the tramway is also on the ground and the survey has been completed from the mill site to the Cornell property.

The boarding house is about completed, and it is expected that the working crew which has been boarding and lodging at Hamilton, will move to the new quarters this week.⁴⁶

At this time, about forty men were employed at the property and their prospective new residence, the boardinghouse, was reported to have “nine bedrooms, a kitchen, lobby, and bath room, and [was] comfortably equipped.”⁴⁷ The activity in McEllen Canyon created hope for a revival of the White Pine district in general, and indeed stimulated new work in both the lead and silver belts by area claim and patent holders that summer and fall.⁴⁸

In early May, TBDC had expanded its holdings with the purchase of the Cornell Group (the Quartz and Glory claims just north of the Nevada Group) from J. C. Wheeler and associates for \$35,000.⁴⁹ The two mines, about 800 feet apart, were then connected via drifts and the main workings were conducted from the Cornell rather than the Nevada Lead. To move the ore, TBDC proposed a 9,200-foot aerial tramway (NV-46-C) to connect the Cornell with the mill in the canyon bottom. Rather than construct a new tram, a disused Bleichert-type double-rope tramway was purchased from the owners of the Chollar mine in Virginia City, Nevada.⁵⁰ The dismantled tram was shipped to Ely by train and its arrival there in June prompted much excitement; it was then trucked to the site.⁵¹

⁴⁵ Ely Daily Times, May 19, 1926.

⁴⁶ Ely Daily Times, June 2, 1926.

⁴⁷ Ely Daily Times, June 3, 1926.

⁴⁸ Ely Daily Times, April 16, May 15, and June 2, 1926.

⁴⁹ James Reck leased the Cornell mine in 1916 and then acted as superintendent for J. C. Wheeler and associates. A cave-in in 1898 had reportedly blocked access to a rich ore deposit and, in 1926, the owners were cleaning out and re-timbering the mine preparatory to re-accessing the ore vein (Ely Daily Times, April 20, 1926). In April, the court decreed that Rose Hankins et al. were the actual property owners and that Wheeler et al. had merely optioned the property from them, thus that payments were due to Hankins rather than Wheeler. The latter filed suit in May in a dispute over payments, but the litigation had no effect on the TBDC’s ownership or on-going work at the site (Ely Daily Times, May 26, 1926).

⁵⁰ Ely Daily Times, May 3, 1926. The Chollar was located in 1859 and became the fifth most productive mine on the Comstock, producing as much as \$17 million in silver ore. In 1887 the Nevada

An Ely Daily Times article dated June 19, 1926, provides one of the only descriptions of the type of equipment originally installed in the mill:

... [The] new plant will be equipped with a... Blake type crusher, a Marathon rod mill, Dorr classifier, flotation tanks and a Dorr thickener. It is expected that the mill will treat 75 tons per day, and that this tonnage can be easily augmented by the installation of new units...

A 55 h.p. full Deisel [*sic*] engine will furnish the power to operate the mill. The tramway will be equipped with 30 500-pound ore buckets, and will be operated primarily by gravity, the 15 loaded buckets furnishing the gravity to pull back the empties.

Further valuable information regarding both mine workings and infrastructure is provided in an article from July:

The discovery of two good veins that contain from 18 inches to three feet of ore assaying 16 oz. of silver and 33 percent lead in the Cornell mine... has elated Supt. P. W. Racey... The ore is of higher grade than the product of the company's adjoining Nevada property and of slightly different character.

Construction of a power plant [NV-46-B] and concentrating mill has been completed and the 9000-foot aerial bucket tramway is about finished except for stringing the cable, which is on the ground... [Delay] in receiving three miles of three-inch pipe for the water line probably will postpone milling operations until the middle of [August]...

The mill is at the base of the mountain and is connected with the Cornell tunnel by the long bucket tramway. The Nevada property, first purchased by the company, is still higher up and the Cornell tunnel is being extended to connect with No. 5 level of the Nevada...

The adit has cut three fissures, in two of which the ore is of high grade and the third may develop pay ore. There is also a large quantity of lead carbonate ore on the dumps that was too low grade

Mill was built near the mine to process low grade ore and the tram, "said to be one of the largest and best constructed tramways in the state," may have been built at that time. After years of decline, the Chollar was closed in the 1940s. See www.nevada-landmarks.com/st/shl209.htm (accessed December 8, 2010).

⁵¹ Ely Daily Times, June 9, 1926.

to ship but which will show a profit in the mill... The tunnel is being advanced at the rate of 10 feet per day...

It was first intended to build a 25-ton pilot mill but the purchase of the Cornell mine, which has a lot of ore in sight, and a great improvement in the Nevada property on No. 5 level, induced a change of plans. The plant just finished will have a capacity of 50 to 75 tons per day and will employ both table concentration and flotation. Ore from the Nevada mine is in a crushed zone and very little of this mine product will require crushing. The reject from the tables will be sulphidized and passed to the flotation cells.

Power for the operation of the mill and other machinery will be supplied by a 55-h.p. Ingersoll-Rand PO oil engine which has been set on its foundation. A 200-ton bin has been built at the head house of the tramway and a 100-ton bin is being constructed at the mill. Charles Mayotte is superintendent.⁵²

Tax records for the year also document the site's development, providing a list of taxable property that included a compressor plant at the mine, a mill, a combined boarding and bunk house, office buildings, an assay office, a hoist, mine cars, mine drills, and household furniture.⁵³

Initial plans had called for water to be piped from Seligman Springs, five miles away, but ultimately it was taken from the "California mill springs" to the east. The pipeline was surveyed in early June and, in late July, TBDC signed a 15-year agreement for the use of water from the springs not only for milling and domestic purposes but for fire protection as well. Four and one-half miles of pipeline were laid to transport the water to the 75,000-gallon wooden tank (NV-46-S) on the hillside north of the mill. In addition, four watering troughs with automatic valves were provided along the line to water the cattle in the area.⁵⁴

After only four months of work, the Belmont Mill was given its initial run on Friday, August 20, 1926, making it the first reduction plant to operate in the district since 1892.⁵⁵ President Heller arrived from New York, en route to Tonopah, for the inaugural run and expressed his "entire satisfaction," noting only the need for minor adjustments to the tram (which delayed operations for at least a

⁵² Ely Daily Times, July 14, 1926. Another article cited the TBDC's belief that the ore "will concentrate without crushing if the coarse material is first removed by screening," which helps to account for the relative dearth of crushing equipment (or the machine mounts for it) at the mill. See "Tonopah Belmont Developing Mine and Installing Small Mill," in Engineering and Mining Journal-Press vol. 121: 20 (May 15, 1926), 819.

⁵³ White Pine County Records, Tax Receipts, 1926.

⁵⁴ Ely Daily Times, April 16, June 3, and July 26, 1926.

⁵⁵ Ely Daily Times, August 12 and 20, 1926.

week) and stating that the company expected to double the capacity of the mill at no distant date.⁵⁶ The beaming optimism was perpetuated a month later in the comments of M. B. Cutter, a director of TBDC and resident of Minneapolis, Minnesota, who predicted that the mill would be increased to 200-ton capacity within six months, noting that “there is already enough ore in sight to keep a hundred-ton mill in continuous operation for several years.”⁵⁷

The mill site itself would have been quite orderly and attractive. After traveling up the newly graded road in the canyon bottom, trucks and automobiles rounded a low hill and came upon the site. The mill stepped neatly up the side of the ridge, connected to the distant mine by the towers and moving cables of the aerial tramway. The offices and boardinghouse were lined up neatly in the canyon bottom while the residences for managers and professionals perched on the side of the hill behind the mill. The buildings were unified by a color scheme of grey walls (either of corrugated metal or painted wood) with white windows and white trim. Red accents were also used on doors and even the hinges of the attic vents on the boardinghouse. On its precarious mountainside perch further up the canyon, the mine site presented an equally orderly and attractive group of buildings.

In a matter of months, TBDC had created a self-contained industrial mining complex where before there had been nothing. The site was connected locally to the town of Hamilton and the other mining enterprises in the White Pine mining district and also regionally to Ely, Tonopah, and Salt Lake City by a network of roads and railroads. This transportation network facilitated both the importation of machinery, equipment and supplies and the exportation of concentrated lead and silver ore. Nationally the site was tied to the great cities of the east and midwest, Philadelphia and Minneapolis to name at least two, where the company's corporate headquarters were located and where its financiers, directors, and stockholders primarily resided. The site was also woven into the national mining consciousness through its inclusion and description in federal inventories published by the U.S. Bureau of Mines and privately funded publications like The Mine Handbook.

E. The Tonopah Belmont Development Company and Early Mining and Milling Activity, 1926-40

Milling of the lead ore proceeded throughout the fall of 1926 and with such promising results that the mill's capacity was indeed expanded, although only to 100 tons per day. In October, Superintendent Racey visited the site from

⁵⁶ Ely Daily Times, August 21 and 27, 1926. It was later noted that the increase from 50 to 100 tons could be effected by “providing for increased power and the possible addition of another rod mill and more tables” (The Ely Record, September 17, 1926).

⁵⁷ The Ely Record, September 17, 1926. An Ely Daily Times article from December 27, 1926, provides Mr. Cutter's place of residence.

Tonopah, noting that work would be completed by early November and that “the final flow sheets will be partly table work and partly flotation...”⁵⁸ The first report on mill production dates to this time, when a carload of lead concentrates was taken to Kimberly (the railhead on the Nevada Northern Railway along Route 50, just west of Ely) and thence to a Utah smelter.⁵⁹ In December both high grade ore and concentrates were shipped from the mill, and indeed it was noted, “The success of the Belmont mill, and the new treatment that is being given the ores of the camp, it is believed will lead to the erection of other reduction plants in the district” to process lower-grades ores otherwise made unprofitable due to transportation and smelting costs.⁶⁰ In four months of operation in 1926, the mill processed 3,588 tons of ore, resulting in a gross yield of \$63,697.⁶¹

The activities of the TBDC created a small revival of the White Pine district by stimulating new work in both the lead and silver belts by other claim and patent holders. This revival mirrored the revival of the mining industry as a whole in Nevada, which had crashed at the end of World War I but which was making a good recovery. Interest and activity were quite evident in August, when it was reported, “Every house and cabin in the town of Hamilton is occupied... Places that have been abandoned for years are again habitated and Hamilton at night has taken on the spirit of a city with the residences and business houses lighted.” In November it was reported that “the Hamilton district is quite lively with new men coming in daily. At the present time some 125 are employed by the operating companies, who have made preparation for winter’s campaign of development.”⁶²

Such was the revival of Hamilton that, in December, an Ely newspaper was moved to add a “Hamilton Notes” column, supplementing those for larger communities like Ruth and McGill. Hamilton and the immediate area had grown sufficiently to support a new sewing club, a civic club, and a Thanksgiving Day dinner at the Hamilton Hotel.⁶³ Later in the month the sewing club agreed upon a community Christmas tree hung with stockings “full of candy, nuts and fruits” for all children in Hamilton and the vicinity. It was also reported that “Mr. and Mrs. Algers have moved to Hamilton from the Tonopah-Bellmont [*sic*] mill in order to place their children in school,” an indication that the site remained active and that

⁵⁸ Ely Daily Times, October 6, 1926. The expansion work reportedly consisted of the construction of a flotation unit under the supervision of Bastian (Ely Daily Times, December 2, 1926). Newspaper accounts make it unclear if this was an additional flotation unit or the first unit at the mill, although the former seems more likely given earlier reporting on the use of both table concentration and flotation at the mill.

⁵⁹ Ely Daily Times, November 8, 1926; and The Ely Record, December 10, 1926.

⁶⁰ Ely Daily Times, December 22, 1926.

⁶¹ B. Couch and J. Carpenter, Nevada’s Metal and Mineral Production (1859-1940, inclusive) (Reno: Nevada State Bureau of Mines, 1943).

⁶² Ely Daily Times, August 18 and November 13, 1926

⁶³ The Ely Record, December 10, 1926. “Mrs. Magotte” was reported as a member of the sewing club; this is most likely the wife of TBDC mine superintendent Charles Mayotte and indicates that the couple was in residence either at the mill site or in Hamilton lodgings.

not only miners but families were living there. Mr. Algers' position with TBDC is unknown but he was probably a manager or technician.⁶⁴ By contrast,

... a year ago when the camp gathered for Christmas there were six people and seven dogs, all told. For two years there was not even a school in Hamilton. Now there are 16 pupils and 20 children in the district.⁶⁵

Unfortunately, the close of 1926 also brought an end to "Hamilton Notes" as the harsh mountain winter forced the area into relative dormancy. The Belmont Mill was closed as of January 5, 1927, according to the Ely Daily Times, due to unpredictable operations during the cold weather, although other mines reported moving men to work on a covered bobsled resembling a "prairie schooner."⁶⁶ The newspaper surmised that a number of needed improvements would be made to the Belmont mill pending spring activity, although no official statement was made regarding the resumption of milling.⁶⁷

The TBDC mine and mill were not completely abandoned. Although the winter continued severe through February, it was reported that TBDC and two other mining companies were "working small forces and waiting for spring."⁶⁸ However, a declining lead market and low extraction seems to have halted any immediate resumption of mining and milling, and the company's net income for 1927 was a dismal \$14,868; its Surf Inlet mine was sold in this year as well.⁶⁹ In both 1927 and 1928 work at Belmont was confined to assessment work, development and maintenance of the main haulage tunnel; there were no reports of mill operation.⁷⁰ A list of registered voters in the Hamilton area indicated that TBDC mine supervisor Charles Mayotte and his wife Mary were still living in the district, and were most likely living at the mill site.⁷¹ The White Pine County 1928 tax records provide the most complete list of buildings and equipment at the time:

Mill on Nevada No. 3 Millsite [NV-46-A]
Boarding house and bunk house – Millsite [NV-46-I]

⁶⁴ The Ely Record, December 24, 1926.

⁶⁵ The Ely Record, December 31, 1926.

⁶⁶ Ely Daily Times, January 14, 1927.

⁶⁷ Ely Daily Times, January 5, 1927.

⁶⁸ The Ely Record, March 11, 1927.

⁶⁹ Wall Street Journal, April 11, 1928, and Carpenter et al., The History of Fifty Years of Mining at Tonopah, 90.

⁷⁰ V. C. Heikes, "Gold, Silver, Copper, Lead and Zinc in Nevada," in U.S. Bureau of Mines Mineral Resources, 1928 (Part I) (Washington: U.S. Government Printing Office, 1931). The mill closure, or at least the TBDC's lack of interest in processing custom ores, is supported by the fact that a new table concentration mill for processing lead-silver ore was constructed at the nearby Roosevelt mine (Ely Record, February 10, 1928).

⁷¹ The Ely Record, October 26, 1928.

Office Building at Millsite [NV-46-H]
Assay Office at Millsite [NV-46-G]
Tram from mine to Mill [NV-46-C]
4 residence buildings at Millsite [only NV-46-N remains]
Boarding house and bunk house at Cornell mine
Water Pipe Line from California spring to Millsite
Hoists
Compressors Mine cars
Machine drills
Household furniture

Three of the residence buildings were removed in the late 1930s and their original locations on the site are unclear, but at least one remains today: the west half of the upper boardinghouse (NV-46-N), built against the hillside behind the mill.

Although Hamilton's boom was diminished by lessened activity at the TBDC property, excitement continued in the silver belt around Treasure Hill and also in the lead belt. A 1928 report described property assessments, development work, an active mill at the Roosevelt mine, shipments of ore and concentrates, a new 500-foot aerial tram, reprocessing of old dumps and tailings piles, and so forth across the district.⁷²

In 1929, TBDC "ceased mining on its own account in favor of leases given to miners."⁷³ In microcosm, the very brief revival of the White Pine district illustrates the typical pattern of mining development in the industrial age:

The rise of industrialized mining in a district did not necessarily mean that the district was profitable or that it would last a long time. There were countless districts, begun with high hopes, that grew quickly and then collapsed. Often however, industrialized mining meant that activity in a district might be prolonged. Industrialization, with its large investment and elaborate systems of operation and organization, produced a momentum that could carry a district well beyond the logical point of abandonment...

The peak of production in a district generally coincided with the industrial phase of development, due in part simply to the scale of operations. However, large scale mining operations also hastened the exhaustion of the known orebodies. The decline was first marked by shrinking bullion output, and then by closing of the mines and mills and an exodus of people from the district... The decline could also be slowed by continued or heightened

⁷² The Ely Record, July 13, 1928.

⁷³ Carpenter et al., The History of Fifty Years of Mining at Tonopah, 90.

exploration and development work... If a revival did not take place, a district's last gasp could be the resumption, or introduction, of the leasing system to work the mines.⁷⁴

Such was the pattern at the Belmont site, with lessees prolonging the life of the property. In 1929 they extracted "considerable high-grade lead-silver ore" from the mine (referred to as the Nevada Lead property), and for three months of that year, until operations were suspended once again due to the low price of silver and lead, lower grade ore from the mine was processed at the mill.⁷⁵ Again in 1930, "first class smelting ore" was produced from the mine.⁷⁶ But the onset of the Great Depression in the 1930s brought work almost entirely to a halt. Between 1931 and 1939 very little activity was reported at the mine or mill, or in the district as a whole, particularly in the early part of the decade.⁷⁷ Demand for base metals increased steadily beginning in the mid-1930s and there was some renewed activity at Belmont. In 1937, proof of labor documents described repairs to the TBDC's underground workings, including the Cornell tunnel.⁷⁸ In this year, two of the residence buildings were removed from the mill site; the reason is unclear, although it may reflect the TBDC's retrenchment efforts.⁷⁹ In 1939, following repairs to the aerial tramway and the milling equipment, a combination of TBDC employees and lessees began processing ores from the mine claims once again.⁸⁰ This new activity seems counterbalanced the fact that a third residence was removed from the property.⁸¹

But in the fall of 1940, the failing TBDC finally sold both the mine and the mill site.⁸² Despite the sale, TBDC reported a net loss of \$7,850 for the year. In 1941 the company reported a net loss of \$16,120 and, in 1942, company president Richard G. Park, Jr., stated in the annual report, "Owing to the lack of working capital and the present difficulties of operation, your directors and officers are seriously considering plans for the dissolution of your company. It is the opinion of the officers that there will be no liquidating dividend paid to stockholders."⁸³ The company was dissolved shortly thereafter.

⁷⁴ Bowers and Muessig, History of Central Nevada, 43.

⁷⁵ V. C. Heikes, "Gold, Silver, Copper, Lead and Zinc in Nevada," in U.S. Bureau of Mines Mineral Resources, 1929 (Part I) (Washington: U.S. Government Printing Office, 1932).

⁷⁶ V. C. Heikes, "Gold, Silver, Copper, Lead and Zinc in Nevada," in U.S. Bureau of Mines Mineral Resources, 1930 (Part I) (Washington: U.S. Government Printing Office, 1933).

⁷⁷ The only reported activity in the district in 1931 was a cyanide leaching operation on old mill tailings at Eberhardt. See Smith, A. M. and J. Carpenter, "Hamilton-Eureka-Austin," unpublished report on field trip, 1931 (Reno: University of Nevada, Nevada Bureau of Mines and Geology mining district files, Document No. 52900001).

⁷⁸ White Pine County Records, Book 114, p. 225.

⁷⁹ White Pine County Records, Tax Receipts, 1937.

⁸⁰ White Pine County Records, Book 114, p. 474.

⁸¹ White Pine County Records, Tax Receipts, 1939.

⁸² White Pine County Records, Book 114, p. 474.

⁸³ Wall Street Journal, April 8, 1942.

F. World War II and Renewed Activity, 1940-48

The TBDC sold the Belmont mine and mill site claims to Captain Arthur A. deMelik of Ely in September 1940.⁸⁴ After one year he sold them to Ely resident Byron (or Bryon) F. Snyder.⁸⁵ After 1942, Snyder's permanent address was given as Fort Lauderdale, Florida, and it appears he worked the property for only two years before moving there.⁸⁶

Three of the only historic photographs yet located of the mill site date from about this period (Figures 4, 5, and 6).⁸⁷ The first was taken from the hillside east of the boardinghouse and facing roughly due north, providing a view of the north half of the boardinghouse (NV-46-I), the north half of the supervisor's office (NV-46-H), the assay office (NV-46-G), the mill (NV-46-A), two thickening tanks (no longer extant), a smaller tank behind the mill (probably used for reclaimed water from the milling process and no longer extant), a residence (NV-46-N, the west half of what would later be named the upper boardinghouse), and a small wood residence or storage building (no longer extant). The second photograph was taken from the hillside south of the mill and depicts the south ends of the workshop (NV-46-K), the boardinghouse, the supervisor's office, the assay office, the mill (including the two upper thickening tanks and a third east of the mill), and the water tank (NV-46-S). The third photograph was taken just south of the mill, providing a detailed view of the two upper thickening tanks, the south side of the mill, and the wooden trestle that led from the mill to the reclaimed water tank.

Activity in 1941 was limited to the removal of only 25 tons of ore from the mine (a rough rule of thumb in the late nineteenth century was that one miner could break approximately one ton of ore per day, a rate that would have increased with more modern drilling techniques). But in 1942, 2,500 tons were removed that yielded 470 ounces of silver and 17,738 pounds of lead, a reflection of the great demand for all metals that was prompted by World War II. At Belmont however, no further activity was reported until 1949.⁸⁸ Proof of annual labor documents for the mill site claims were found for the assessment years ending in July of 1941

⁸⁴ White Pine County Records, Book 121, pp. 291, 293, and 310; Book 129, p. 204.

⁸⁵ White Pine County Records, Book 121, p. 306-07.

⁸⁶ White Pine County Records, Tax Receipts, 1942-48.

⁸⁷ East Ely Railroad Museum archives, no negative numbers or accession numbers. The photos appear to be prints made in February 1975 (as indicated by a date stamp on the prints) from older negatives. A prospective date of ca. 1940 is derived from the condition of the buildings and structures, the style of an automobile and the clothing of the man and woman in the photos, the presence of one or two residences behind the mill, and the likelihood that photographs would have been taken at a time when ownership of the mill changed.

⁸⁸ "White Pine District – Principal Mines," unpublished district summary [after 1963] (Reno: University of Nevada, Nevada Bureau of Mines and Geology mining district files, Document No. 52900082).

and 1942, but no indication of mill workings was provided in either document.⁸⁹ No account of the mine was given in the annual Mineral Resources reports for the 1940s although other small mines in the district were mentioned, again indicating a very low level of activity. Interestingly, a geologic map of the mine was made in 1947, although whether this was purely for mapping and documentation purposes or as part of exploration and development work is unclear.⁹⁰ The list of taxable property at the mine and mill remained about the same during this period, although the lone remaining “residence” was reduced in stature to a “cabin” and a burro supplemented various trucks and automobiles for several years.⁹¹

G. Mine and Mill Leasing, 1949-1960

Snyder sold the mine and mill site claims to Don A. Jennings of the Belmont Mine and Mill Co. in June 1949.⁹² It appears that activity at the mine (referred to as the “Belmont mine”) continued through 1956, a reflection of the strong demand for base metals after World War II and through the mid-1950s. Because the mine was operated by only a few individuals and/or lessees rather than an industrialized organization like TBDC, annual tonnages were generally quite modest, ranging from a low of ten tons in 1949 to 194 tons in 1950.⁹³ Despite this, the mine was listed in the Minerals Yearbook as being one of the leading producers of lead in the district for 1955 and 1956, producing about 35,000 pounds each year. “D. A. and Blanca Jennings” were listed in association with the Belmont mine in 1955 while Andrew Dowd and Fred Harris were listed in 1956.⁹⁴ The report states that the lead ore was shipped to a Utah smelter and does not mention whether the mill was used for processing. However, the secondary system that was installed in the mill, and which remains partially in place today, most likely dates to this period (see drawings for flow sheet). According to those who knew him, Jennings was not an experienced miner or mill operator but he did attempt to use the mill to process ore.⁹⁵

The 1952 tax receipt still itemized an office building (supervisor’s office, NV-46-H) and a cabin (south half of upper boardinghouse, NV-46-N) at the mill site. But in 1953 the office building was reclassified as a house, a status it retained to the

⁸⁹ White Pine County Records, Instrument Nos. 69775 and 71804.

⁹⁰ Fred L. Humphrey, Geology of the White Pine Mining District, White Pine County, Nevada, Nevada Bureau of Mines Bulletin 57 (Reno: University of Nevada, 1960), 102.

⁹¹ White Pine County Records, Tax Receipts, 1941-48.

⁹² White Pine County Records, Book 145, p. 170-71, and Book 151, p. 165.

⁹³ “White Pine District – Principal Mines,” unpublished district summary [after 1963] (Reno: University of Nevada, Nevada Bureau of Mines and Geology mining district files, Document No. 52900082).

⁹⁴ L. E. Davis and W. C. Fischer, “The Mineral Industry of Nevada,” in US Bureau of Mines Minerals Yearbook Area Reports, 1955, Vol. III (Washington: US Government Printing Office, 1958), 715; and L. E. Davis et al., “The Mineral Industry of Nevada,” in US Bureau of Mines Minerals Yearbook Area Reports, 1956, Vol. III (Washington: US Government Printing Office, 1958), 761.

⁹⁵ Interview with Hal (Rod) Jensen, Jr., 1 October 2010.

present.⁹⁶ This most likely marks the time when extensive alterations were made to the building, including the installation of a kitchen and bathroom, window reconfiguration on the east side, and a bedroom addition on the north end. Jennings may have lived in the newly renovated building, seasonally or year-round, but it may also have been used by the aforementioned Dowd, a mining engineer, and his wife Ermyl. According to oral accounts, the couple had lived and worked at the Belmont Mill site as early as 1945, perhaps as employees of the owners or as unofficial lessees, and also as caretakers.⁹⁷

In April 1957, Jennings sold a lease and option to purchase the mill site claims to the Hamilton Land Co.; the agreement was to be valid through August 1962.⁹⁸ This is also the year when Jennings' address on tax receipts changed from Ely to California. No activity at the mine was reported in the Minerals Yearbook for 1958, no doubt because of the major depression that had hit Nevada's mineral industry the year before. In fact, the weak market for lead forced the closure of much larger mining operations in the state.⁹⁹

Jennings signed another lease and option to purchase agreement in April 1959, to be valid through January 1969, this time with Belmont Lead, Inc.¹⁰⁰ The new company worked on rehabilitating the mine, pipelines, and housing and conducted exploratory activities. A total of 232 tons of ore was extracted and some was even shipped before Belmont Lead ceased operation in late 1960, and the remainder of the ore was stockpiled.¹⁰¹ Subsequent records suggest that neither the mine nor the mill was ever really worked again. In Nevada, "continued low prices prohibited operations of many mines... and it was evident that it would be many years before lead-zinc... returned to the scene." This slump in the market, combined with aging infrastructure and lack of substantial investment to repair and maintain it, brought an end to the working days of the Belmont mine and mill. As noted elsewhere, "Mines are not pipelines that may be turned on and off at will, but are more like pieces of machinery that require constant maintenance," and the Belmont was an aged machine.¹⁰²

After Andrew Dowd's death sometime after 1956, Ermyl Dowd continued to live at the site and work as caretaker for Don Jennings. By the 1960s she made her

⁹⁶ White Pine County Records, Tax Receipts, 1952-present.

⁹⁷ Interviews with Hal Jensen and Hal (Rod) Jensen, Jr., 1 October 2010.

⁹⁸ A copy of the lease and option document could not be found; however, it was referenced in a notice of no-liability that Jennings filed in June 1957 (White Pine County Records, Instrument No. 107450).

⁹⁹ Tingley et al., Outline of Nevada Mining History, 33.

¹⁰⁰ Again the actual lease and option document could not be found, but it was referenced in a notice of non-liability that Jennings filed in May 1959 (White Pine County Records, Book 218, p. 186).

¹⁰¹ L. E. Davis et al., "Nevada," in US Bureau of Mines Minerals Yearbook Area Reports, 1960, vol III (Washington: US Government Printing Office, 1961), 661; and "White Pine District – Principal Mines," p. 3.

¹⁰² Tingley et al., Outline of Nevada Mining History, 29 and 33.

home in the kitchen of the boardinghouse, where she also kept an upright piano; she had reportedly been a vaudeville performer in her younger days. Beginning at this time and perhaps earlier, she rented rooms and provided meals in the boardinghouse to miners working nearby claims, a practice she continued until the middle or late 1970s to supplement the limited income from her own mining claims.¹⁰³

H. The Boardinghouse Years, 1961-ca. 1978

In 1963, Jennings relocated the mill site claims with the Bureau of Land Management (BLM, which acts as the federal recording agency for claims rather than the Forest Service), combining them into a single claim called the “Belmont Mill.”¹⁰⁴ No proof of labor or title documents were located for the claims between 1963 and 1967. In 1968 Jennings agreed to sell the mine and mill to Silver King Mines, Inc., although no record of the sale itself was found.¹⁰⁵

Several past and present Ely residents recall the period in the 1960s when Mrs. Dowd acted as the Belmont Mill caretaker. Hal (Rod) Jensen, Jr., worked claims in the area between 1966 and 1969 with his father, and remembers that all six boardinghouse rooms were occupied by miners working area claims during the summer months, sometimes at double occupancy. A miner named Tick Doherty lived in the southeast room every summer for ten years, and Francis Waldy would come out from Ely and help Mrs. Dowd with her claims. No one roomed in the supervisor’s office (despite the fact that it had been converted to a house, perhaps evidence that Jennings had altered it for his personal use) or the assay office, but Mrs. Dowd maintained flowerbeds in their front yards.¹⁰⁶

At the time, the boardinghouse had running water, indoor toilets, and a telephone but no electricity; kerosene was used for lighting, wood and coal for cooking and heating. The boarders made use of the lower outhouse (NV-46-L) and Mrs. Dowd used the root cellar (NV-46-J) for food storage and the workshop (NV-46-K) for coal and wood storage.¹⁰⁷ After the boarders left, Mrs. Dowd remained at the mill site through the winter. Ron Jordan, an Ely resident who worked for the county road maintenance department in the late 1960s and early 1970s, recalls clearing the road in the winter and stopping at Mrs. Dowd’s to use the telephone. As he remembers it, the mill was used fitfully in the late 1960s but little or not at all after 1967. He attributed this to a lack of material to put through the mill, but also recalled that in some years there was insufficient water from the California Mill springs to operate it.¹⁰⁸

¹⁰³ Interview with Hal (Rod) Jensen, Jr.

¹⁰⁴ White Pine County Records, Book 255, p. 136.

¹⁰⁵ White Pine County Records, Book 299, p. 287.

¹⁰⁶ Interview with Hal (Rod) Jensen, Jr.

¹⁰⁷ Ibid.

¹⁰⁸ Interview with Ronald Jordan, 29 September 2010.

Both Jensen and Jordan stated that a great deal of equipment remained in the mill in the 1960s. The tram still had six or seven ore buckets on the cable, although it was unclear if the system was operable. (These buckets are visible in a historic photograph of the mine buildings; Figure 7). Wilfley concentration tables were present on the fifth level of the mill (estimates varied between four and six), and Jordan believed they were moved to the Lackawanna Mill when the Belmont Mill was finally closed. Other equipment may have been moved to Eureka. Both men recall a large jaw crusher that sat at the base of the off-loading ramp and chute (NV-46-D) west of the mill, and Jensen recalled a 40-horsepower Ingersoll Rand oil engine in the power house (NV-46-B) with associated smaller engines on concrete mounts around the perimeter of the room. One smaller engine had powered the electrical system and there was also a compressor that was used to start the main engine.¹⁰⁹

The ownership history of the claims for approximately the next ten years is unclear. Beginning around 1968, a large mining project (referred to as the Mt. Hamilton Gold Mine or the Mt. Hamilton Project, among others) was occurring on the west slope of the White Pine Mountains. According to a 2005 technical report on the project, Phillips Petroleum Co. had acquired the land for the Mt. Hamilton Gold Mine in 1968, and between 1968 and 1982 drilled over 100,000 feet in the area and identified a tungsten-copper-molybdenum resource that partially overlapped the Centennial gold deposit. It appears that the Belmont Mill claims were part of this project, which involved multiple parties.

This period of mining history was marked the ascension of large, often multinational corporations in the mining industry both in the United States and around the world. Phillips Petroleum had first entered the Nevada scene in the early 1960s, exploring not only for oil but for metals as well. As a large and highly organized corporation with considerable financial resources, the company conducted aggressive exploration and development work that sometimes involved buying, leasing, or otherwise holding numerous claims without requiring an immediate return of investment, if ever.¹¹⁰ The Belmont claims were simply brought under the corporation's umbrella and then forgotten, and the property was subsequently shuttled between large corporations for about thirty years.

A 1971 conveyance document stated that Silver King Mines, Inc., sold a 1 percent interest in the mill site and mine claims to Phillips Petroleum; no additional records of conveyance of interest in the claims to Phillips Petroleum were found.¹¹¹ The two companies then submitted proof of labor documents for the unpatented mill site and mine claims for 1971 and 1972, although Jennings was

¹⁰⁹ Interviews with Hal (Rod) Jensen, Jr., and Ronald Jordan.

¹¹⁰ Tingley et al., Outline of Nevada Mining History, 34.

¹¹¹ White Pine County Records, Book 317, p. 395.

still listed as the owner of the claims in the 1971 document.¹¹² Between 1973 and 1978, Phillips Petroleum submitted the annual proof of labor documents for the claims, and the work performed during this time consisted mainly of geologic mapping, diamond core drilling, assaying of core, and road building. There is no indication that any of the work occurred on the Belmont mill or mine claims.¹¹³

In the 1970s Mrs. Dowd married Carl Tillman, the caretaker for Hal Jensen's property in Seligman Canyon and a man thirty years her junior. In the mid-1970s the couple moved from the boardinghouse to the upper boardinghouse and at that time built the large addition to the east that has since collapsed. The upper charcoal and lumber pile (NV-46-R) marks the remains of the couple's coal and wood pile. The junked cars and old trailer (NV-46-Q) that remain scattered along the road leading to the upper boardinghouse were reportedly moved there by Tillman. In the late 1970s or even as late as 1980 (perhaps when the property changed hands and Don Jennings no longer paid a caretaker's fee), Dowd and Tillman moved to Ely, where the latter worked at the Hotel Nevada.¹¹⁴

I. Site Abandonment and Ownership Changes, 1979-2010

The departure of Mrs. Dowd marked the abandonment of the Belmont Mill site and the beginning of its new status as a mining relic, hunting camp, and tourist attraction. At this time or earlier, some of the remaining pieces of milling equipment described by Jensen and Jordan may have been sold, including the Wilfley tables, the engine, and the jaw crusher. Two photographs taken in about 1980 document that the mill site buildings were largely intact, although the two thickening tanks south of the mill had been removed and a shed-roofed building (NV-46-T, now collapsed) across the road from the assay office was still standing (Figures 8 and 9). In the ensuing years, visitors to the site have occasionally removed boards from the buildings for campfires, removed smaller pieces of equipment for souvenirs, broken windows, and enacted other minor vandalism, while lack of maintenance and exposure to harsh weather conditions have taken an even greater toll.

On October 3, 1979, Phillips Petroleum recorded the mill site and mine claims (the "Belmont group") with the BLM. The cover letter for the recordation submittal package stated that the company was the owner of the claims, but no title documents specifically supporting this assertion were discovered. (In fact, Don Jennings' name continued to appear on tax receipts through at least 1980, although the tax notices were usually sent in care of Phillips Petroleum and the company presumably paid the fees.) The company then continued to submit

¹¹² White Pine County Records, Book 342, p. 484, and Book 351, p. 476.

¹¹³ White Pine County Records, Book 359, p. 354; Book 368, p. 377; Book 380, p. 83; Book 398, p. 77; Book 405, p. 24; and Book 418, p. 101.

¹¹⁴ Interviews with Hal (Rod) Jensen, Jr., and Ronald Jordan. Tillman died in the early 1990s on the dance floor of the casino and Dowd probably died several years before that.

proof of labor documents for the claims from 1979 through 1982.¹¹⁵ The records indicate that the claims of the Belmont group were part of a larger contiguous group of claims that were being explored, presumably as part of the ongoing Mt. Hamilton Gold Mine project. Exploratory activities in the group of claims were performed “at or by the expense of Phillips Petroleum Co. for the owners” of the claims and included geologic mapping, diamond core drilling, assaying of core, and road building.

A 1982 report on the White Pine district noted the work of Phillips Petroleum in the Monte Cristo area on the west slope of the White Pine Mountains, where the company was “drilling a deep tungsten-moly target.” The report also noted that a few claims had been recently staked and some drilling had been done, but that there was no current mining activity in the area. Also at this time, an inspection of the Belmont mine concluded that it was inactive and that the first 100 feet of the main adit had collapsed, although it did note the presence of the tram house, a blacksmith shop, and “assorted buildings.”¹¹⁶

Between 1983 and 1986, proof of labor documents were filed by an assortment of entities including Phillips Petroleum, Queenstake Resources (USA), Inc., and NICOR Mineral Ventures, Inc.¹¹⁷ In 1987, Westmont Mining, Inc., filed proof of labor documents with the BLM (NICOR had changed its name to Westmont in 1987). Conveyance and proof of labor documents between 1988 and 1990 are slightly confusing due to several corporate name changes; however, they show that the claims were ultimately transferred to Westmont by May 1990.

In 1994, Westmont sold the mill site and mine claims to Mt. Hamilton Mining Co. which, with REA Mining Corp., paid the maintenance fees on some of the unpatented claims through 2001. In 1999, due the company’s failure to meet annual requirements, the BLM deemed the Belmont Mill site, Blue Jay, Blue Jay No. 2, Ace of Hearts, Blue Bird No 2, and Blue Eagle claims to be forfeited. In 2002, all of the remaining claims associated with the mine and mill (the Nevada, Nevada No. 2, Blue Jay No. 1, Blue Jay No. 3, Nevada Fraction, Ace of Spades, Blue Bird No. 1, Radio, and Nevada Protector) were also deemed by the BLM to be forfeited.

¹¹⁵ White Pine County Records, Book 6, p. 49 and 489; Book 28, p. 14; Book 41, p. 255; and Book 52, p. 219.

¹¹⁶ J. Tingley and J. Bentz, “Mineral Resources of Egan Resource Area,” Nevada Bureau of Mines and Geology unpublished district summary 82-9, 1982 (Reno: University of Nevada, Nevada Bureau of Mines and Geology mining district files, Document No. 52900024), 2; and Jones, R. B. and J. Bentz, “Tonopah-Belmont,” unpublished property report, 1981 (Reno: University of Nevada, Nevada Bureau of Mines and Geology mining district files, Document No. 52900029), 1.

¹¹⁷ White Pine County Records, Book 66, p. 534; Book 78, p. 358; and Book 101, p. 24.

The patented Quartz and Glory claims of the Cornell Group remain in private ownership. It appears that all of the buildings that remain on this property were constructed by TBDC and include:

1. Aerial tramway upper terminal: one-story building with basement, gable-roofed, with timber and wood-framed walls and roof (with many reused elements from the Chollar tramway), walls and roof clad in corrugated metal.
2. Collapsed building: one-story, wood-framed, gable-roofed building, non-galvanized corrugated metal walls and roof, located just north of the tram terminal.
3. Compressor shed: single-story, gable roofed building with wood-framed walls and roof clad in corrugated metal siding, massive poured-concrete machine mounts in floor for compressor, located just north of the collapsed building.
4. Boarding and bunkhouse: one and one-half story, gable-roofed building with a small basement, wood-framed walls clad in board and batten siding, an enclosed entry, deck on the north side, located just north of compressor shed (Figure 10).
5. Hoist: the remains of a wood-framed hoist located south of the tram terminal.
6. Blacksmith shop: one-story, gable-roofed, wood-framed building with corrugated metal walls and roof, located south of the hoist near the mine entrance.

While these buildings and structures are integral to the history of the Belmont Mill, they are not under the purview of the HTNF and were not examined or documented in any depth for this report. However, one older photograph provides a view of the mine buildings when they were still in good condition (see Figure 7). The photo was apparently accessioned in 1974 and may date to much earlier, perhaps ca. 1940 when black and white photographs were taken of the mill buildings (see Figures 4, 5, and 6).

In 2007, Aaron Minor relocated the Belmont Mill site with the BLM and sold the claim in the following year to Morgan W. Richardson. The mill site claim was forfeited in 2009 and a placer claim was located in 2010; this allows the claim holder to process the mill tailings and also to request use of the mill buildings after submitting a plan of operations. Despite this existing claim, the buildings and surface structures are now considered to be under the ownership of the HTNF. Without any type of maintenance since at least 1980, the buildings have fallen into disrepair and several are presently at risk of structural failure. Most unfortunately, the boardinghouse had already collapsed under the weight of snow in the winter of 2009-2010 (Figure 11) while the upper boardinghouse collapsed at an earlier date. The HTNF recognized the historic significance of the site and thus sought to fulfill its obligations under Section 110 of the NHPA by

documenting and stabilizing the buildings in consultation with the Nevada SHPO. As part of the HTNF's effort, a HAER documentation project was completed by a team of private contractors; associated work has included a structural engineering survey and recommendations for stabilization, as well as the completion of this HSR in accordance with NPS standards.

SOURCES OF INFORMATION

A. Architectural Drawings:

None located.

B. Early Views:

East Ely Railroad Depot Museum archives (Ely NV):

ca. 1940, three black and white prints of site and buildings, including the mill, assay office, supervisor's office, upper and lower boardinghouses, and water tank as well as several structures no longer extant. These prints were apparently made from older photographs or negatives: a date stamp indicates February 1975 but the photographs are clearly earlier and taken at a different time of year. All images are included with this report as Supplemental Material, Figures 4, 5 and 6.

ca. 1980, one color print of the mill, tool shed and lumber rack, and assay office. Date estimated from similar dated print at White Pine Public Museum. Image is included with this report as Supplemental Material, Figure 9.

White Pine Public Museum files (Ely NV):

1980, one color print of the mill, power house, tool shed and lumber rack, boardinghouse, and collapsed building (still standing). Image is included with this report as Supplemental Material, Figure 8.

ca. 1974 or earlier, one black and white print of the upper tram terminal, tram buckets, boardinghouse, and other buildings at the Belmont Mine. Photo was apparently accessioned in 1974 from C. E. Johnson and may date to much earlier. Image is included with this report as Supplemental Material, Figure 7.

USDA Forest Service, Intermountain Region slide database (Ogden UT):

1975, one color slide of the north side of the mill.

C. Interviews:

Hal Jensen, Ely resident and Seligman Canyon mine claimholder during 1950s-60s, 1 October 2010. Interviewed by author on site. Residence at 2215 Lincoln Ave., Ely NV 89301.

Hal (Rod) Jensen, Jr., seasonal Belmont Mill site resident and nearby mine claimholder during 1960s, 1 October 2010. Interviewed by author on site. Residence at 3501 Offshore Ct., Lake Havasu City AZ 86406.

Ronald Jordan, Ely resident and White Pine County road maintenance worker in 1960s-70s, 29 September 2010. Interviewed by author on telephone. Residence on Mill Street, Ely NV 89301.

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"Asks Commissioners for New Road," March 29, 1926.
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"Hamilton Mill Now Under Construction," April 16, 1926.
"Old Mine at Hamilton May Again Be Shipper," April 20, 1926.
"Building Activities in Hamilton District," April 22, 1926.
"Cornell Property Passes to Tonopah Dev. Company," May 3, 1926.
"Hamilton Producing from Several Mines," May 15, 1926.
"Tonopah Belmont Dev. Co. Makes Headway at Hamilton," May 19, 1926.
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“Aerial Tram Arrives for Hamilton Mine,” June 9, 1926.
“Hamilton Mill Nearing Completion; Aerial Tram Will Convey Ore to Mill,” June 19, 1926.
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“Important New Discoveries Made in Hamilton Lead Belt,” July 26, 1926.
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“Awakening of Hamilton Set for August 20; Tonopah-Belmont Co. Plan Start New Mill,” August 12, 1926.
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“New Mill at Hamilton is Given Initial Trial,” August 21, 1926.
“General Activity Shown in Hamilton,” August 23, 1926.
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E. Likely Sources Not Yet Investigated:

In an attempt to gather further information, oral histories, or historic photographs of the Belmont site, advertisements describing this project and soliciting information were placed in the Ely, Nevada, newspaper for several weeks. Results were limited, but it seems likely that additional information remains in the minds or attics of the residents of Ely and the surrounding towns. This type of information may come forth with further inquiry or the passage of time.

Another potential resource are the corporate records of the Tonopah Belmont Development Company. These would undoubtedly include design drawings and process flow sheets for the mill and other buildings, correspondence relating to the site's construction, operation, and staffing (including payroll accounts that might provide information on more anonymous figures like the mine and mill workers) from 1926 through 1940, and probably photographs which would have been shared with corporate management, directors, and perhaps stockholders. The company was dissolved in the early 1940s and unfortunately the location of its records is unknown. It is possible that the records were destroyed.

Census records might provide some information but the period of activity at the mill was so brief that by 1930, there would have been very few people remaining in the area who were associated with the Belmont site. As well, anyone living at the site would have been listed as a resident of Hamilton, making it difficult to make direct connections between people and the place.

F. Supplemental Material:

Figures 1 and 2: Historic claim map and historic White Pine mining district map.

Figure 3: Possible flow sheet for mill as constructed in 1926.

Figures 4-9: Historic photographs, ca. 1940 and 1980.

Figures 10 and 11: Sketch plans of the mine and mill boardinghouses, 2010.

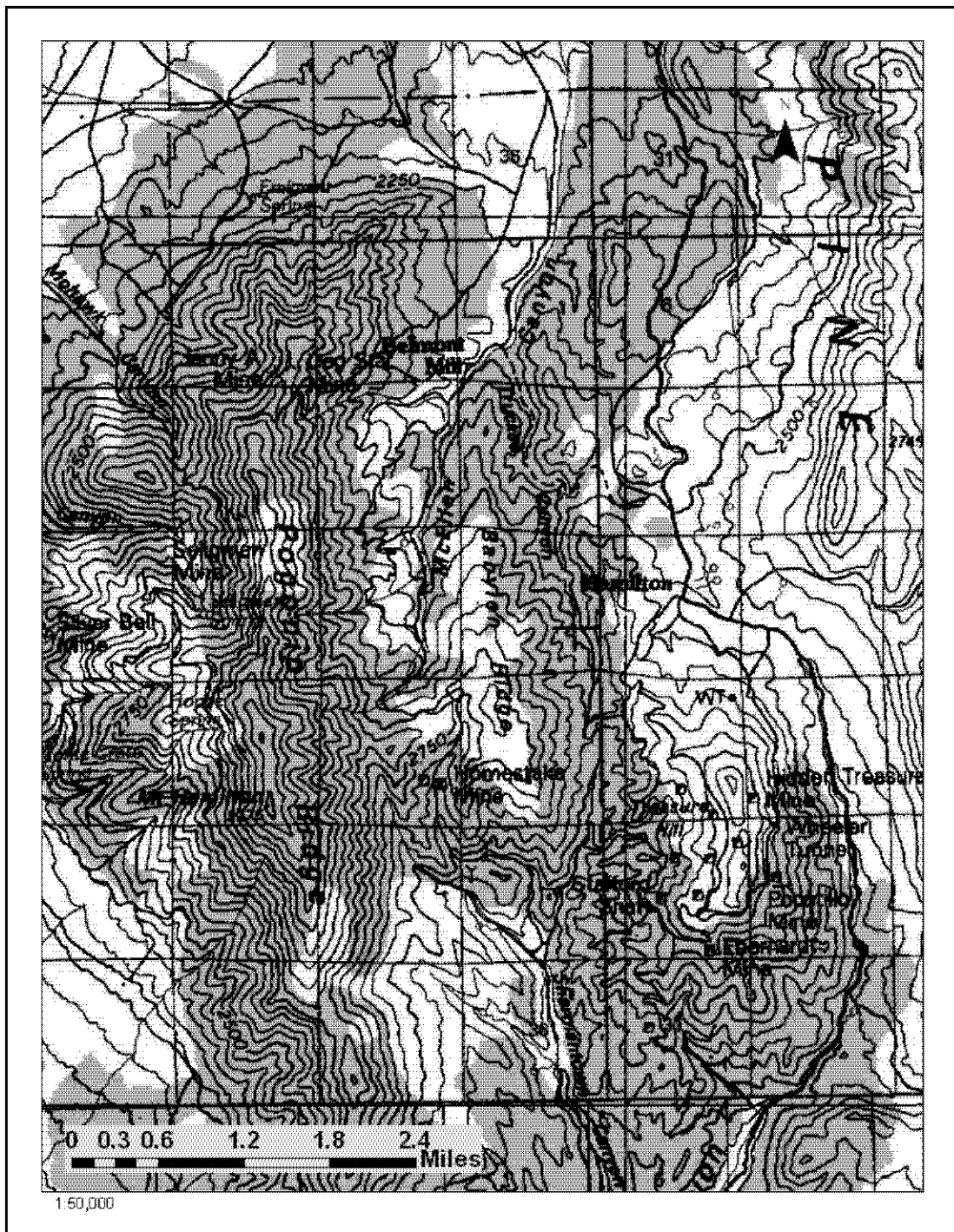


Figure 1. A portion of the United States Geological Survey image server map (100K) showing the White Pine mining district. McEllen Canyon and the Belmont Mill are located at the top center of the map. The town of Hamilton and Treasure Hill are located to the east, across Babylon Ridge.

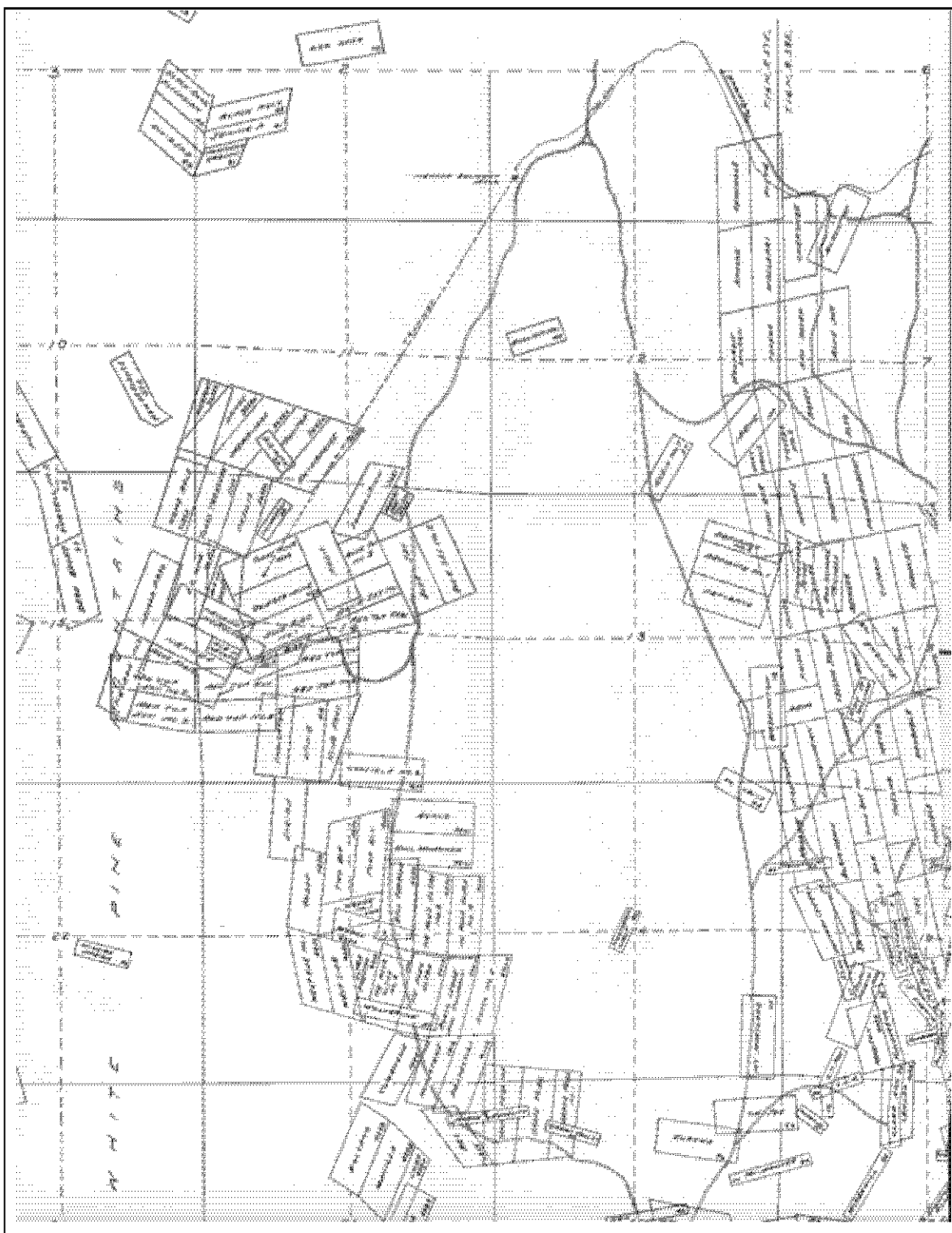


Figure 2. A section of the 1927 White Pine mining district claim map showing the Belmont Mill site and associated claims. From Humphrey, Geology of the White Pine Mining District (Reno: University of Nevada, 1960), Plate 2.

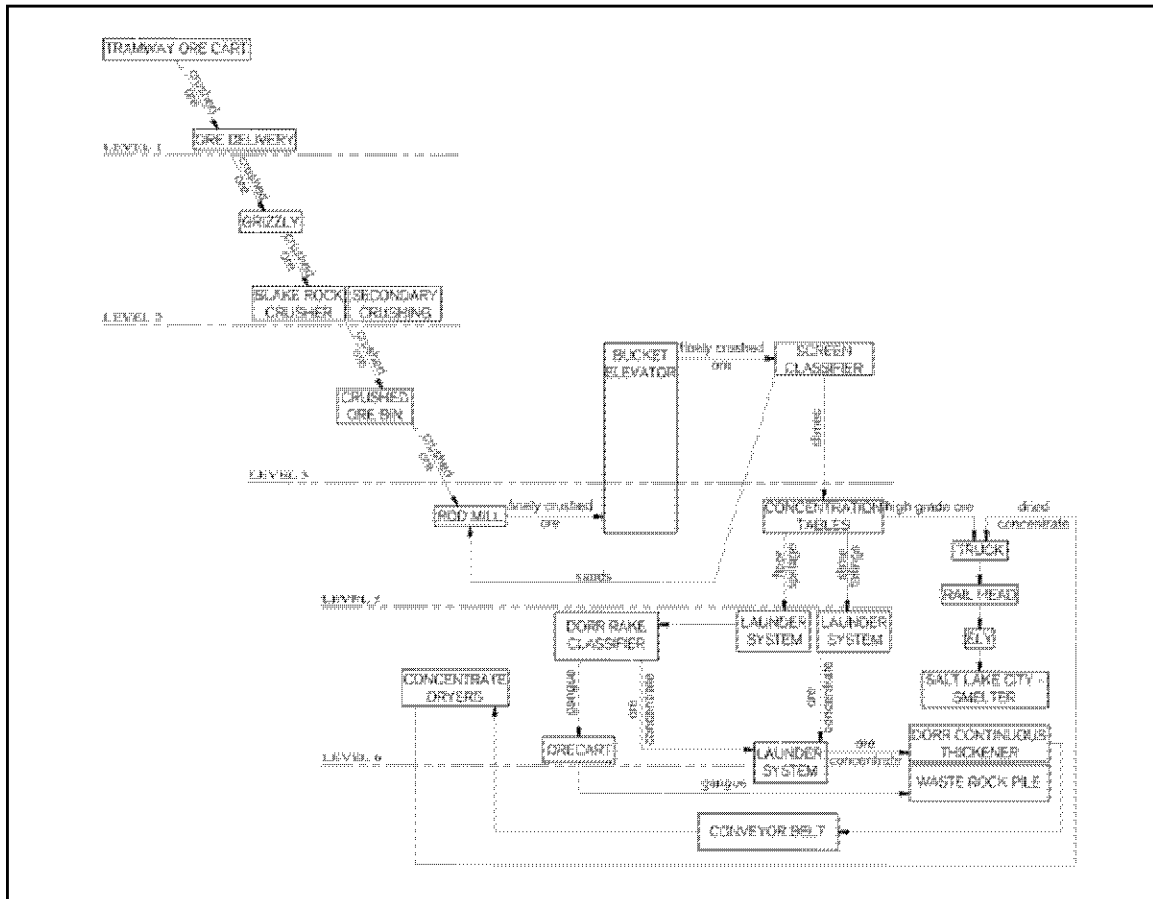


Figure 3. Possible flow sheet for the Belmont Mill, Nevada, when it was constructed in 1926, based on written accounts and site evidence. (Drawing by ajc architects.)

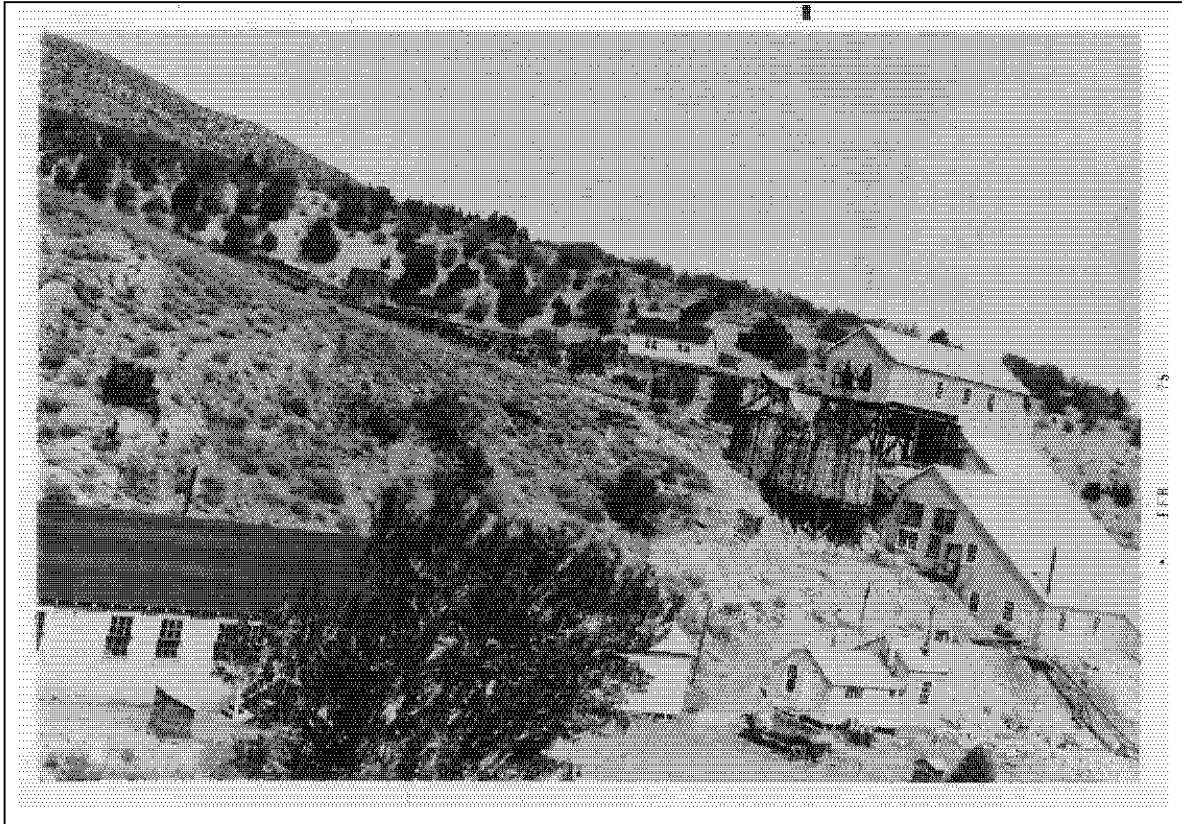


Figure 4. The Belmont Mill site ca. 1940, facing northwest, including the mill, assay office, supervisor's office, upper and lower boardinghouses, and water tank as well as several structures no longer extant. The print was apparently made from an older photograph or negative: a date stamp indicates February 1975 but the photograph is clearly earlier and taken at a different time of year. (Courtesy of East Ely Railroad Depot Museum.)

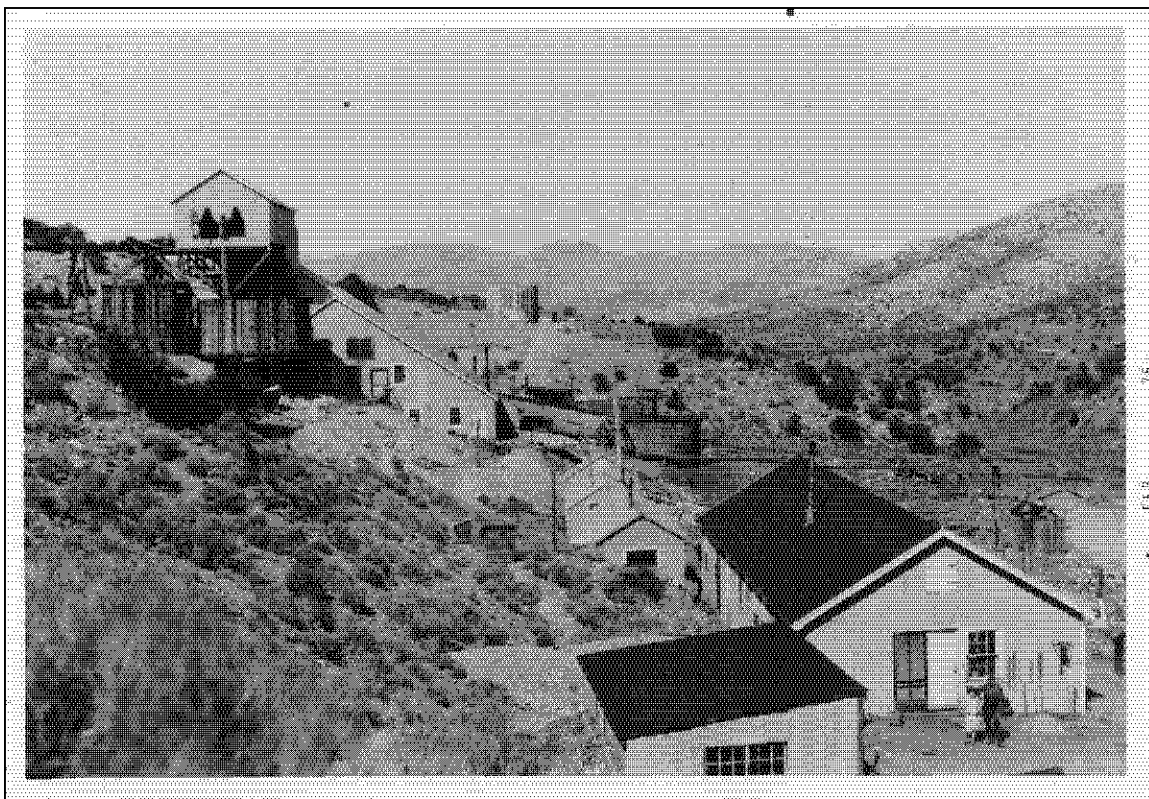


Figure 5. The Belmont Mill site ca. 1940, facing north, including the water tank, mill, assay office, supervisor's office, boardinghouse, and workshop as well as several structures no longer extant. The print was apparently made from an older photograph or negative: a date stamp indicates February 1975 but the photograph is clearly earlier and taken at a different time of year. (Courtesy of East Ely Railroad Depot Museum.)



Figure 6. The Belmont Mill ca. 1940, facing north, including the mill and the two tanks on the southwest side, no longer extant. The print was apparently made from an older photograph or negative: a date stamp indicates February 1975 but the photograph is clearly earlier and taken at a different time of year. (Courtesy of East Ely Railroad Depot Museum.)

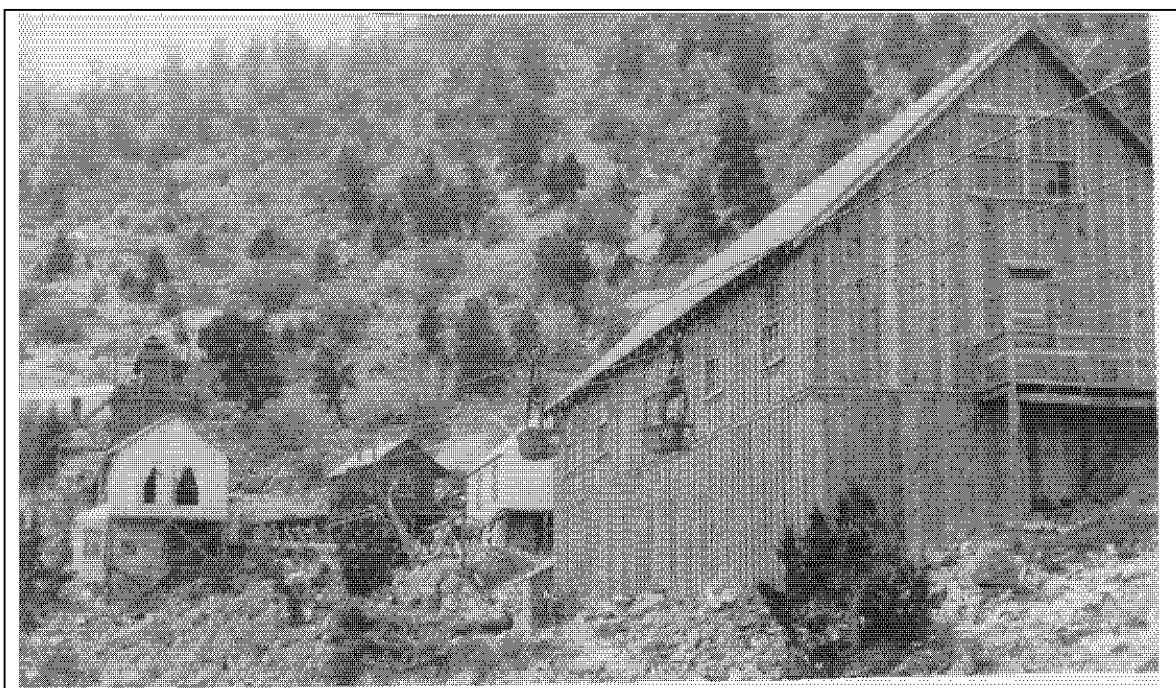


Figure 7. A photograph of the Belmont mine ca. 1974 or earlier, facing south, documenting the upper tram terminal, tram buckets, boardinghouse, and other buildings. (Courtesy of White Pine Public Museum.)

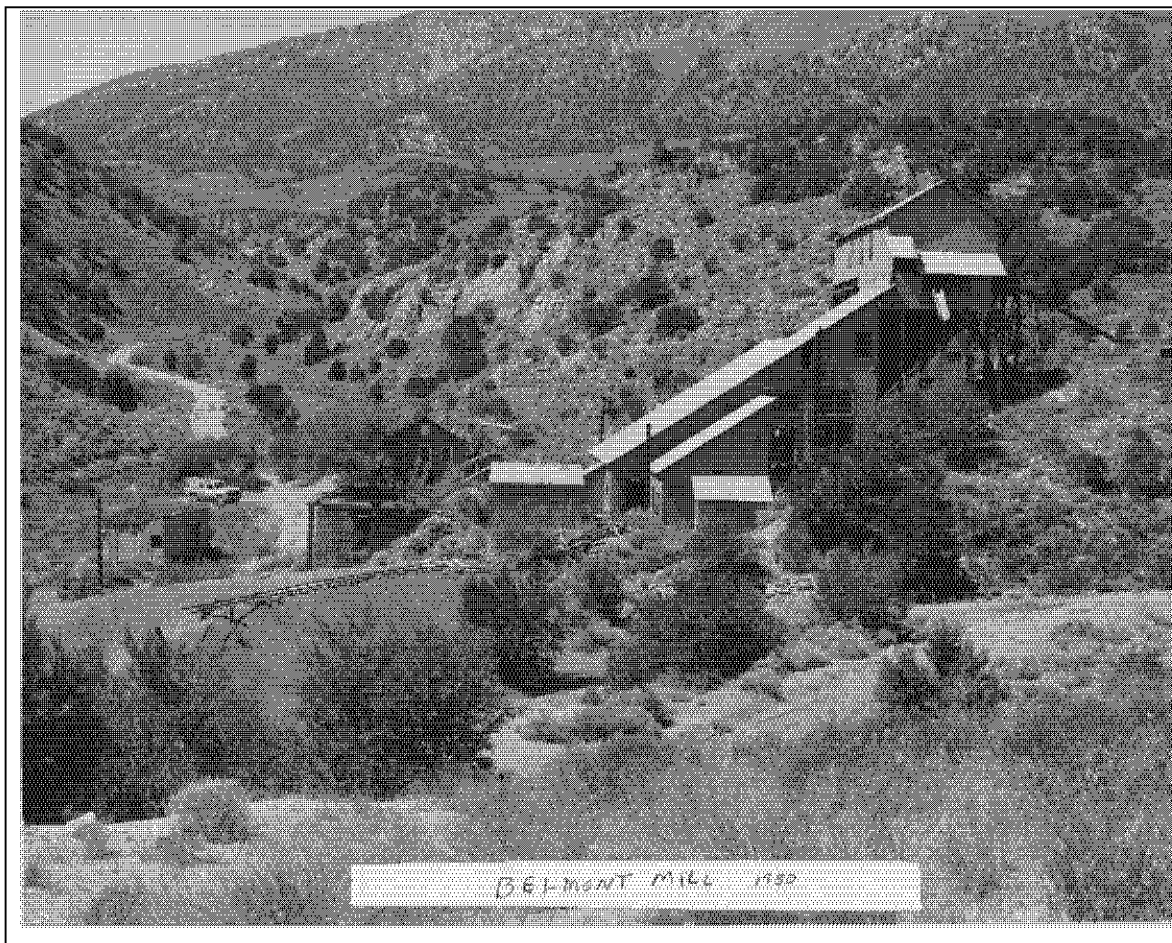


Figure 8. A 1980 photograph of the mill, power house, tool shed and lumber rack, boardinghouse, and collapsed building (still standing), facing south. (Courtesy of White Pine Public Museum.)



Figure 9. A ca. 1980 photograph of the mill, tool shed and lumber rack, and assay office. (Courtesy of East Ely Railroad Depot Museum.)

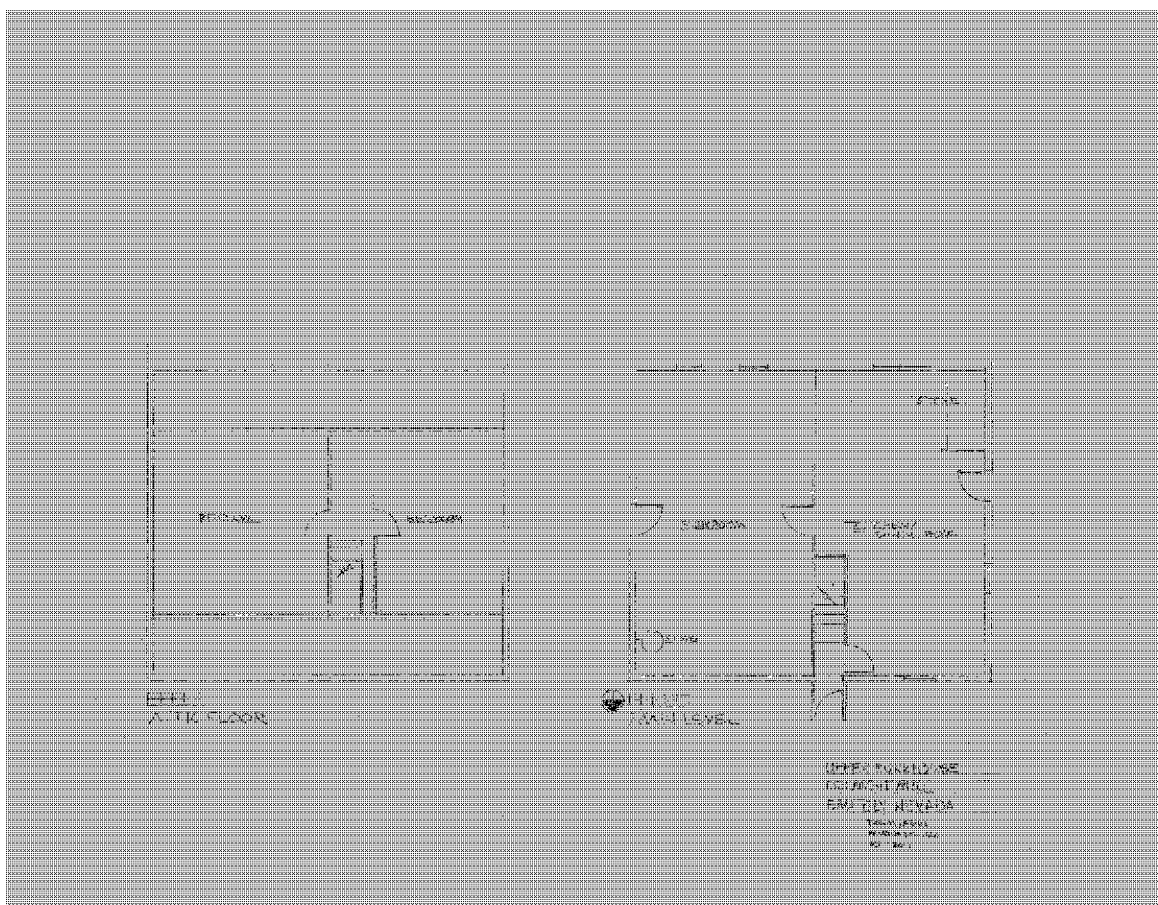


Figure 10. A 2011 sketch plan of the boardinghouse at the Belmont mine. (Drawing by Thomas Carter.)

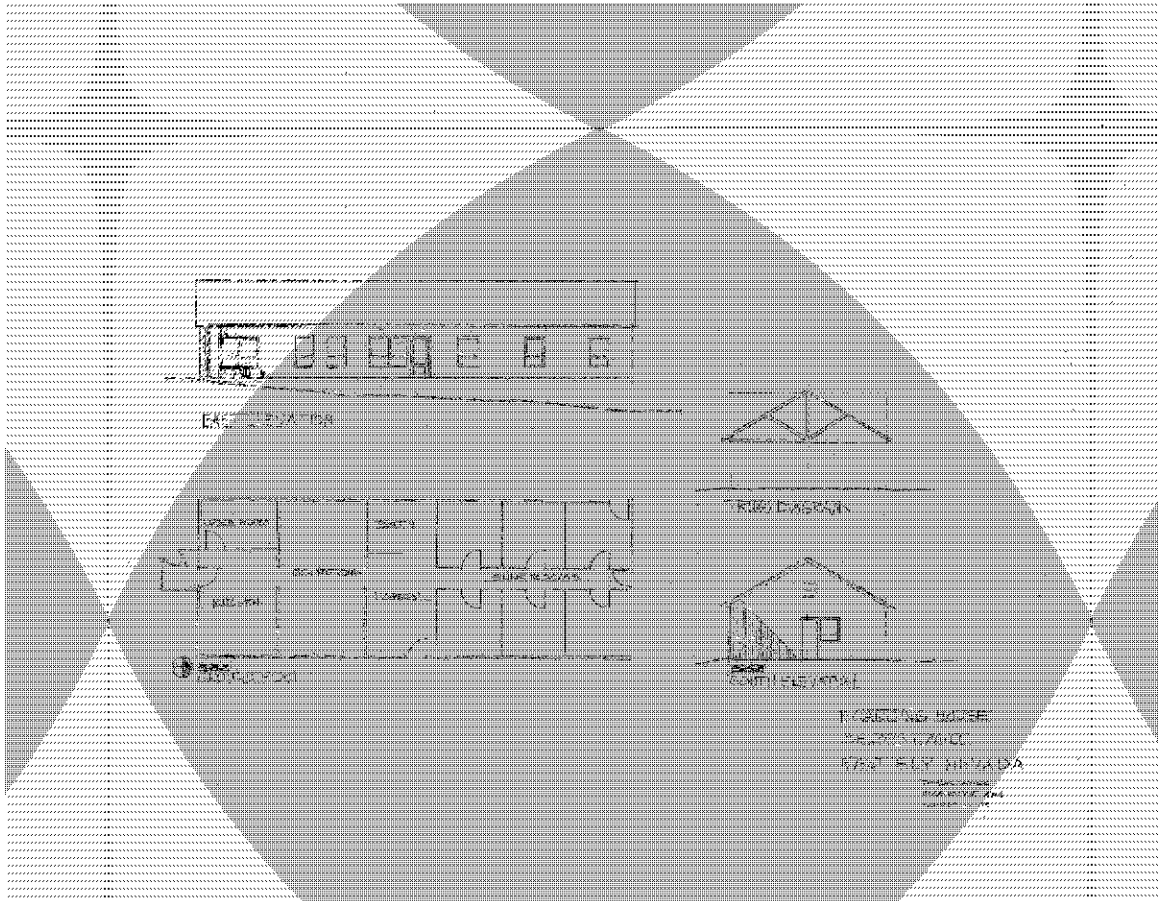


Figure 11. A 2010 sketch plan of the collapsed boardinghouse at the mill site (NV-46-I), as reconstructed. (Drawing by Thomas Carter.)